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THE RESOURCES AGENCY OF CALIFORNIA

Department of Water Resources

BULLETIN No. 98

NORTHEASTERN COUNTIES GROUND WATER INVESTIGATION

VOLUME II

PLATES

FEBRUARY 1963

EDMUND G. BROWN
Governor
State of California

WILLIAM E. WARNE
Administrator
The Resources Agency of California
and Director
Department of Water Resources

The Resources Agency of California
Department of Water Resources
BULLETIN No. 98

NORTHEASTERN COUNTIES GROUND WATER INVESTIGATION

VOLUME II

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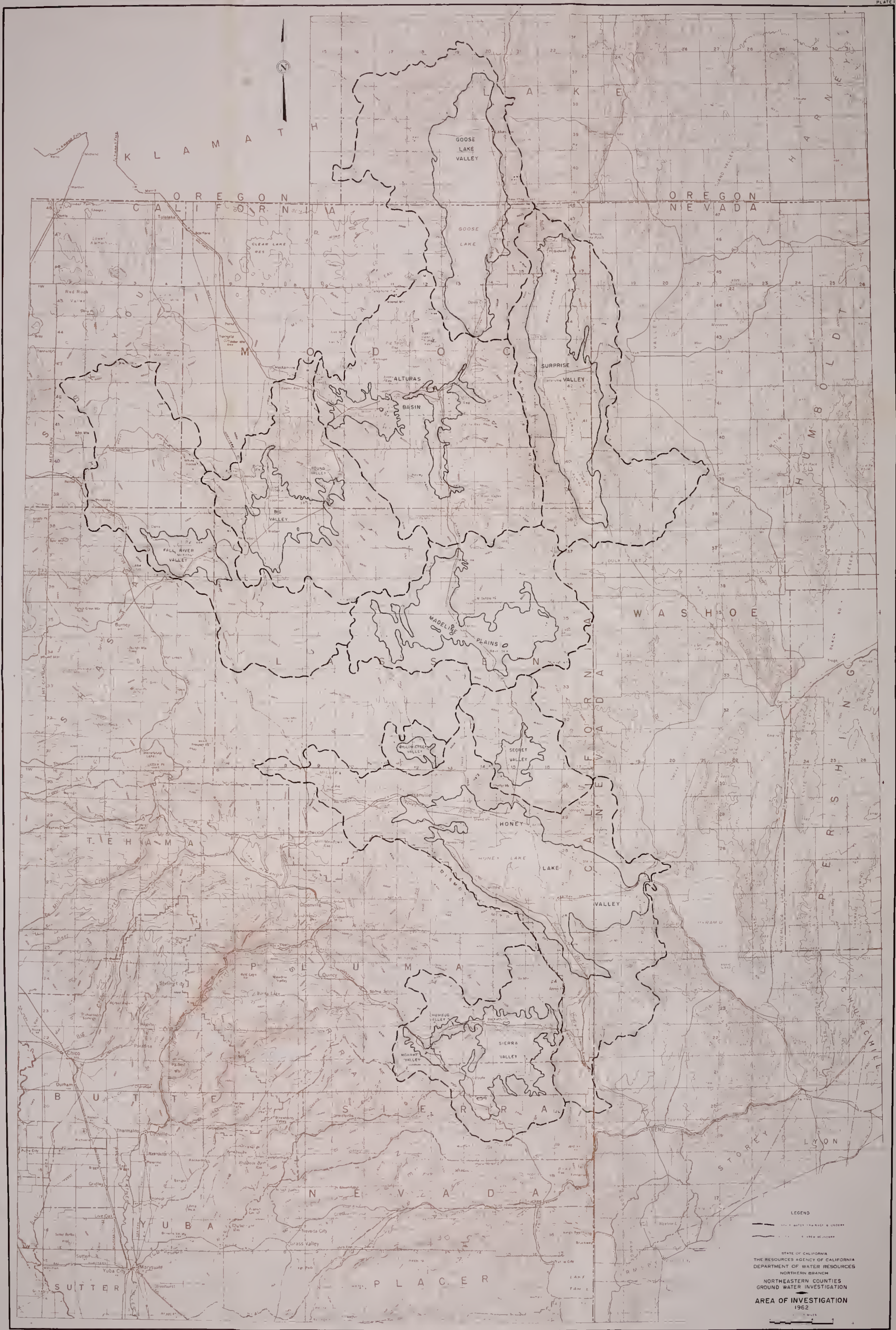
31 Generalized Lines of Equal Elevation of Water in Wells in Aquifers, Honey Lake Valley Ground Water Basin, Spring 1960

32 Potential for Development of Ground Water, Honey Lake Valley Ground Water Basin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LAKE
HARNEY
OREGON
CALIFORNIA
NEVADA
HUMBOLDT
WASHOE
PERSHING
CHURCHILL
STOREY
LYON
MODOC
SISKIYOU
SHASTA
LASSEN
TEHAMA
PLUMAS
SIERRA
BUTTE
YUBA
NEVADA
PLACER
SUTTER
GOOSE LAKE VALLEY
GOOSE LAKE
SURPRISE VALLEY
ALTURAS BASIN
ROUND VALLEY
BIG VALLEY
FALL RIVER VALLEY
MADELINE PLAINS
WILLOW CREEK VALLEY
SECRET VALLEY
HONEY LAKE VALLEY
SIERRA VALLEY
HUMBUG VALLEY
MOHAWK VALLEY
CLEAR LAKE RES
Tulelake
Red Rock Valley
Burney
Susanville
Westwood
Greenville
Quincy
Chico
Durham
Oroville
Thermalito
Gridley
Live Oak
Marysville
Yuba City
Nevada City
Grass Valley
Reno
Paradise

LEGEND

STATE OF CALIFORNIA
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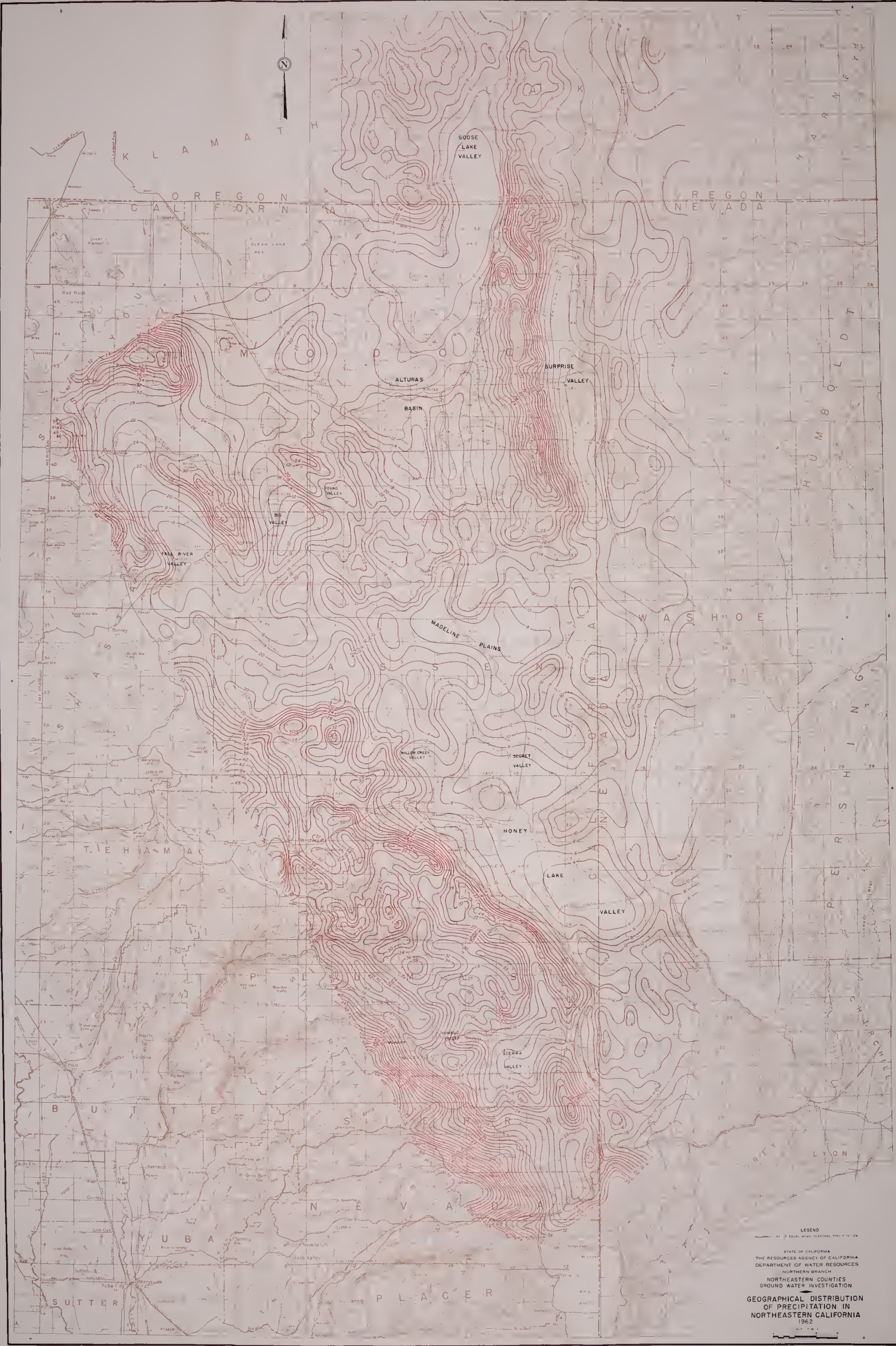
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREA OF INVESTIGATION
1962


KLAMATH
OREGON
CALIFORNIA
OREGON
NEVADA
HARNEY
GOOSE LAKE VALLEY
MODOC
SURPRISE VALLEY
ALTURAS BASIN
HUMBOLDT
ROUND VALLEY
BIG VALLEY
FALL RIVER VALLEY
SHASTA
MADELINE PLAINS
LASSEN
WASHOE
WILLOW CREEK VALLEY
SECRET VALLEY
HONEY LAKE VALLEY
PERSHING
TEHAMA
PLUMAS
SIERRA VALLEY
CHURCHILL
BUTTE
SIERRA
STOREY
LYON
NEVADA
YUBA
SUTTER
PLACER
MERIDIAN

LEGEND

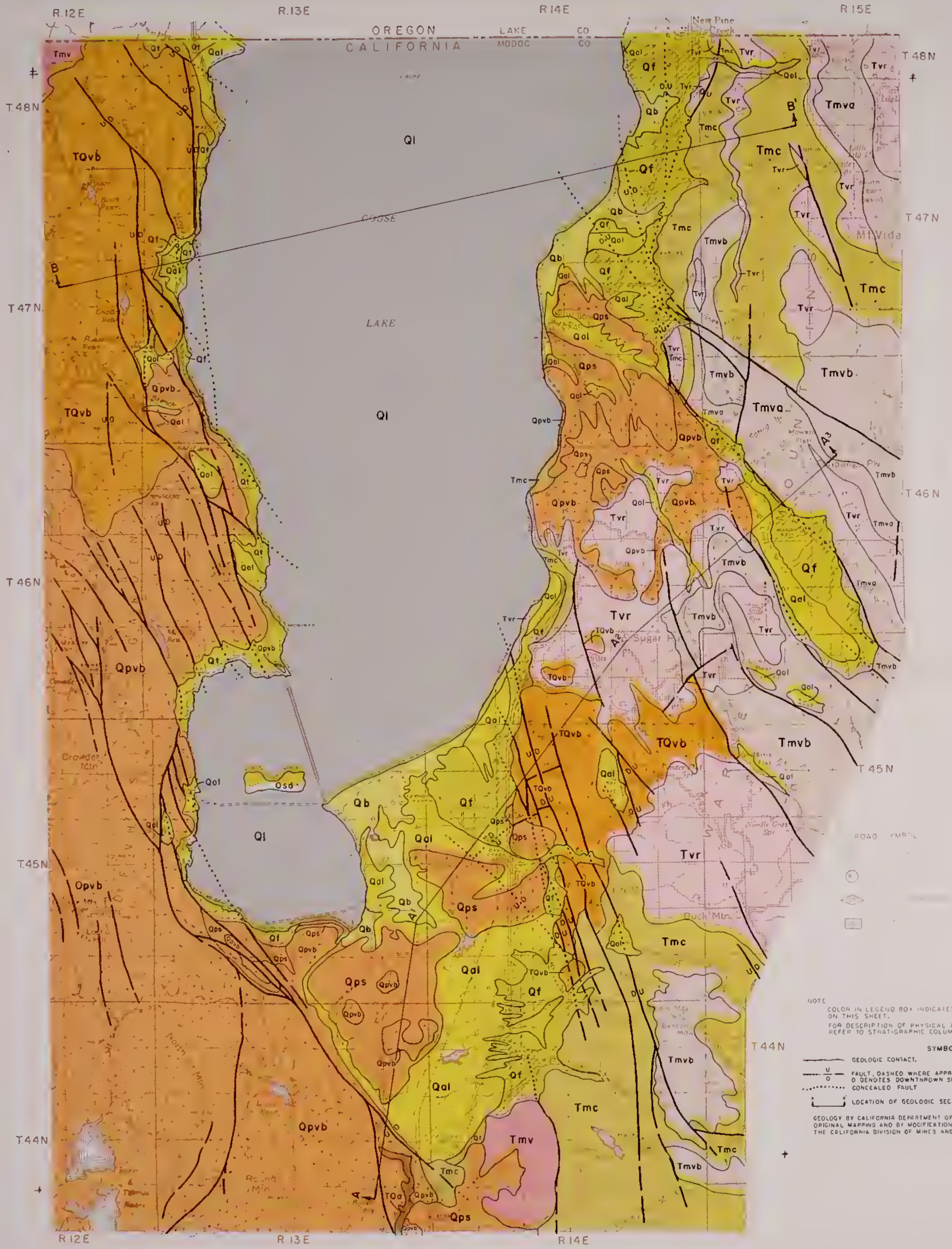
—— LINE OF EQUAL MEAN SEASONAL PRECIPITATION

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GEOGRAPHICAL DISTRIBUTION OF PRECIPITATION IN NORTHEASTERN CALIFORNIA
1962

BULLETIN 98
PLATE 3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T.47N
T.46N
T.45N
T.44N
T 48N
T 47N
T 46N
T 45N
T 44N
OREGON
CALIFORNIA
LAKE CO
MODOC CO
New Pine Creek
GOOSE
LAKE
Mt Vida
Sugar Hill
Buck Mtn
Crowder Mtn
B
B'
A2
A3
Ql
Qb
Qf
Qal
Qps
Qpvb
TQvb
TQa
Qsd
Tmc
Tmv
Tmvb
Tmva
Tvr
U
D

OREGON
DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
GLENN
MENDOCINO
COLUSA
SIERRA
NEVADA
SONOMA
CONTRA COSTA
SAN FRANCISCO
N

GEOLOGIC UNITS

SEDIMENTARY ROCKS

CENOZOIC	QUATERNARY	Recent	Qsd	SAND DUNES
			Qs	SAND AND SILT DEPOSITS
			Ql	RECENT LAKE DEPOSITS
			Qls	LANDSLIDES
			Qta	TALUS
			Qmp	MUCK AND PEAT DEPOSITS
			Qb	BASIN DEPOSITS
			Qal	INTERMEDIATE ALLUVIAL DEPOSITS
			Qf	ALLUVIAL FANS
			Qt	TERRACES
		Pleistocene	Qps	NEAR-SHORE DEPOSITS
			Qpl	PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
			Qgo	GLACIAL OUTWASH
			Qgm	MORAINES
			TQa	ALTURAS FORMATION
			TQb	BIEBER FORMATION
	TERTIARY	Pliocene	Tpl	PLIOCENE LAKE DEPOSITS
		Miocene	Tmfc	FORTY-NINE CAMP FORMATION
		Oligocene	Tødc	DEEP CREEK CONGLOMERATE
		Eocene	Teg	AURIFEROUS GRAVELS
		Undivided	Tgr	GOLD RUN SANDSTONE
			Tfs	FORT SAGE SANDSTONE

VOLCANIC ROCKS

CENOZOIC	QUATERNARY	Recent	Qrb	RECENT BASALT
			✳	PLEISTOCENE AND RECENT CINDER CONES
		Pleistocene	Qpvb	PLEISTOCENE BASALT
			Qpvp	PLEISTOCENE PYROCLASTIC ROCKS
			TQvb	PLIO-PLEISTOCENE BASALT
			TQvp	PLIO-PLEISTOCENE PYROCLASTIC ROCKS
			TQst	WARM SPRINGS TUFF
	TERTIARY	Pliocene	Tpvb	PLIOCENE BASALT
			Tpva	PLIOCENE ANDESITE
			Tpvp	PLIOCENE PYROCLASTIC ROCKS
		Miocene	Tmv	MIOCENE VOLCANIC ROCKS, UNDIVIDED
			Tmvb	MIOCENE BASALT
			Tmva	MIOCENE ANDESITE
			Tmvp	MIOCENE PYROCLASTIC ROCKS
			Tmtc	TURNER CREEK FORMATION
			Tmc	CEDARVILLE SERIES
		Undivided	Tvr	RHYOLITE
			Tvb	BIG VALLEY MOUNTAIN VOLCANIC SERIES
			Tsv	SIERRAN VOLCANIC ROCKS, UNDIVIDED
			Tsvb	SIERRAN BASALT
			Tsva	SIERRAN ANDESITE
			Tsvp	SIERRAN PYROCLASTIC ROCKS

BASEMENT COMPLEX

MESOZOIC	JKgr	GRANITIC ROCKS
PALEOZOIC	pKm	METAMORPHIC ROCKS

NOTE

COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET.

FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES, REFER TO STRATIGRAPHIC COLUMN. (TABLE 9)

SYMBOLS

———	GEOLOGIC CONTACT.
$\frac{U}{D}$	FAULT, DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
········	CONCEALED FAULT
⌊A A'⌋	LOCATION OF GEOLOGIC SECTION.

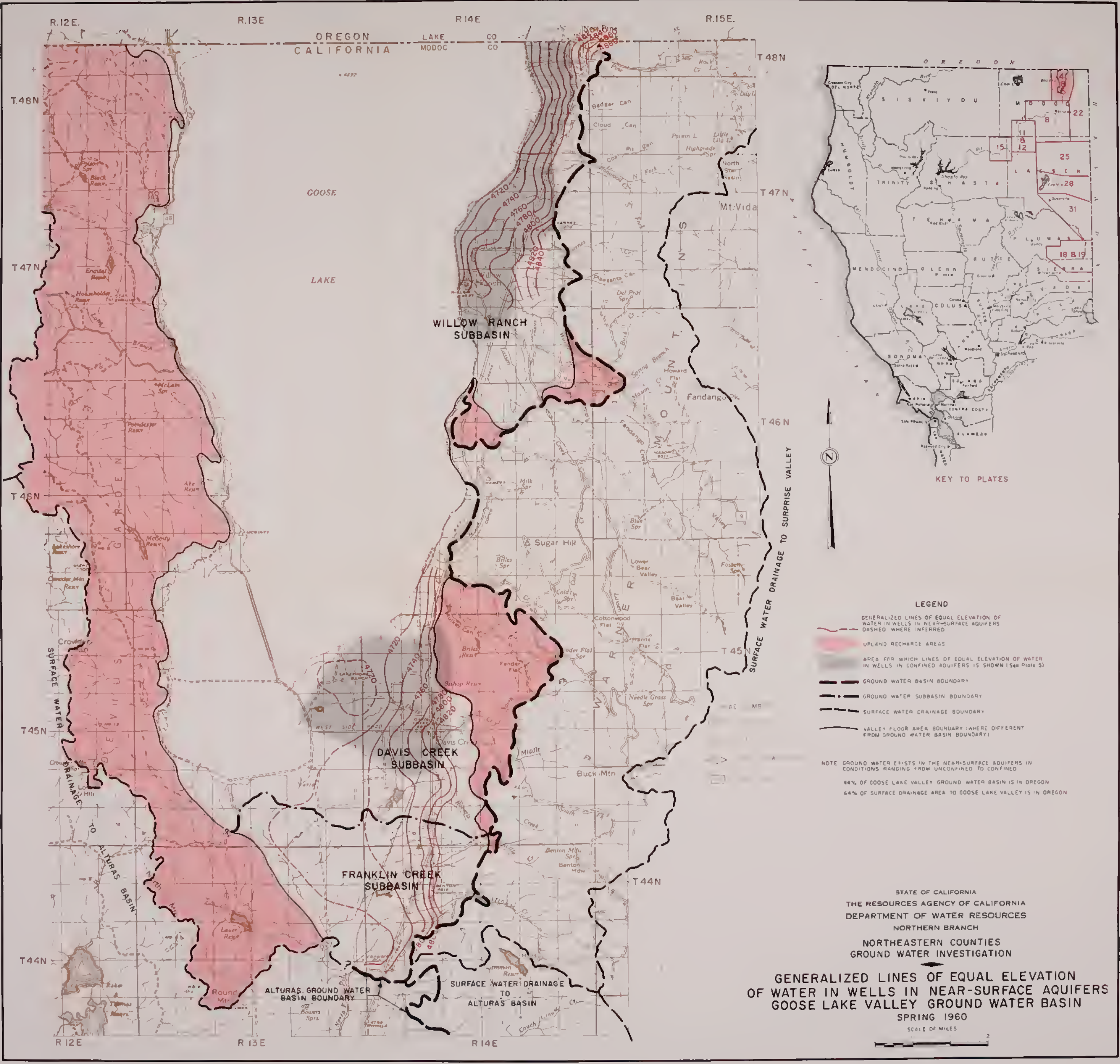
GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
GOOSE LAKE VALLEY GROUND WATER BASIN
1962

SCALE OF MILES
1 0 2


R.12E.
R.13E
R.14E
R.15E.
OREGON
CALIFORNIA
LAKE CO
MODOC CO
T.48N
T.47N
T.46N
T.45N
T.44N
T 48N
T 47N
T 46 N
T 45 N
T 44N
GOOSE
LAKE
WILLOW RANCH SUBBASIN
DAVIS CREEK SUBBASIN
FRANKLIN CREEK SUBBASIN
ALTURAS GROUND WATER BASIN BOUNDARY
SURFACE WATER DRAINAGE TO ALTURAS BASIN
SURFACE WATER DRAINAGE TO ALTURAS BASIN
SURFACE WATER DRAINAGE TO SURPRISE VALLEY
WARNER MOUNTAINS
DEVILS GARDEN
Mt.Vida
Fandango Pk.
Sugar Hill
Buck Mtn
Round Mtn
Davis Cr
Badger Can
Cloud Can
North Star Basin
Howard Flat
Lower Bear Valley
Bear Valley
Cottonwood Flat
Fender Flat
Briles Resr
Bishop Resr
Lauer Resr
Ammon Resr
Benton Mdw
Bowers Sprs
4720
4740
4760
4780
4800
4820
4840
4860
4880
KEY TO PLATES
OREGON
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
GLENN
MENDOCINO
COLUSA
SIERRA
NEVADA
SONOMA
CONTRA COSTA
ALAMEDA
4
8
11
12
15
22
25
28
31
18 & 19
SCALE OF MILES
0
2

LEGEND

〰 GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS DASHED WHERE INFERRED

🟥 UPLAND RECHARGE AREAS

▨ AREA FOR WHICH LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS IS SHOWN (See Plate 5)

— — GROUND WATER BASIN BOUNDARY

— · — GROUND WATER SUBBASIN BOUNDARY

— — — SURFACE WATER DRAINAGE BOUNDARY

—— VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

NOTE GROUND WATER EXISTS IN THE NEAR-SURFACE AQUIFERS IN CONDITIONS RANGING FROM UNCONFINED TO CONFINED

44% OF GOOSE LAKE VALLEY GROUND WATER BASIN IS IN OREGON

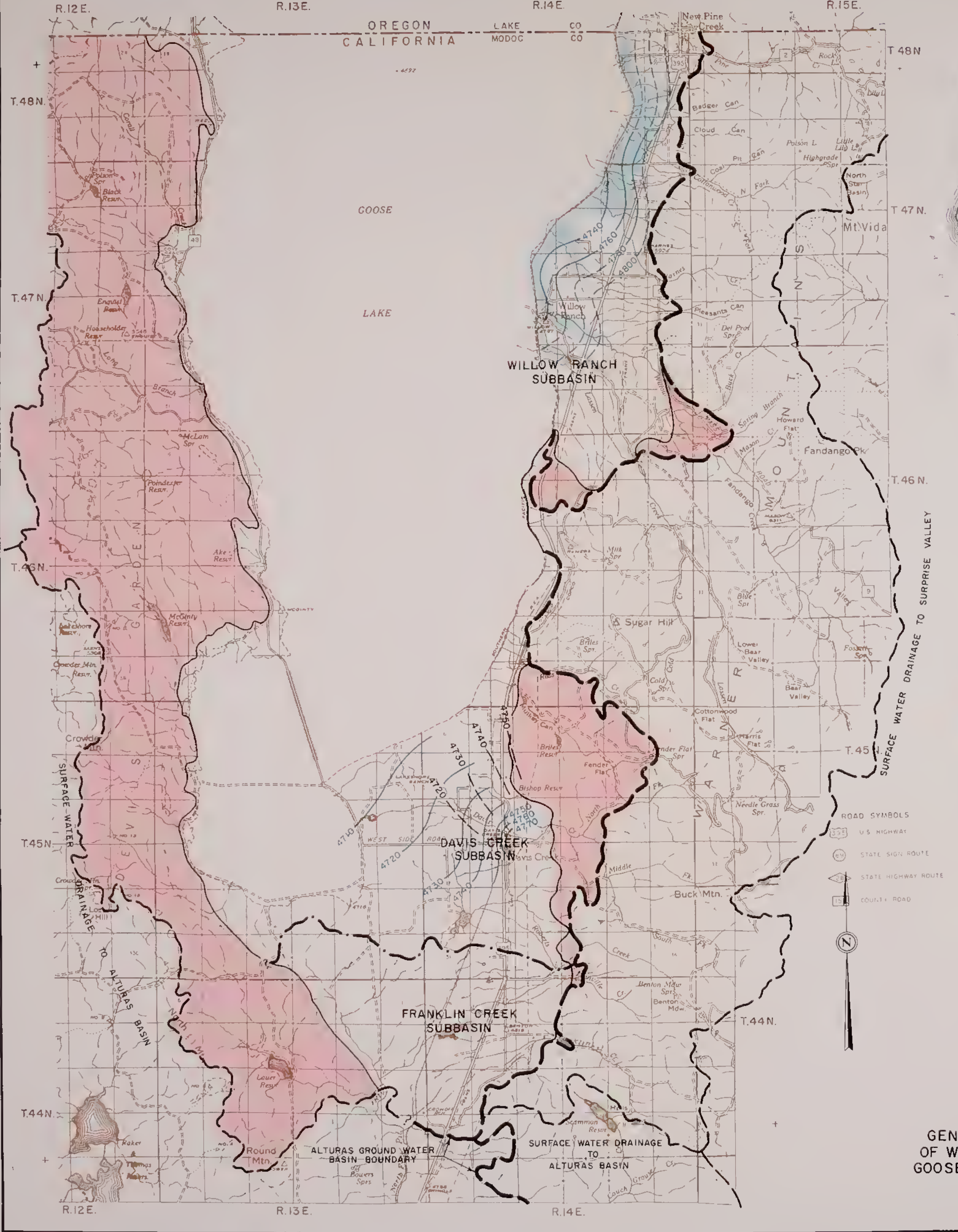
64% OF SURFACE DRAINAGE AREA TO GOOSE LAKE VALLEY IS IN OREGON

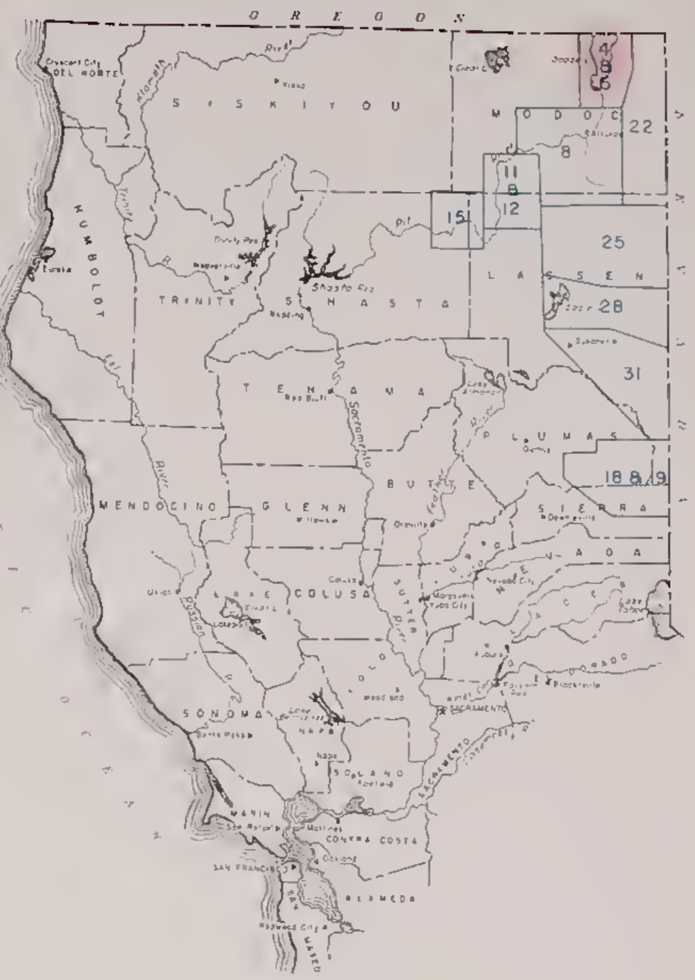
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS GOOSE LAKE VALLEY GROUND WATER BASIN

SPRING 1960


R.12E.
R.13E.
R.14E.
R.15E.
OREGON
CALIFORNIA
LAKE CO
MODOC CO
New Pine Creek
T.48N.
T.47N.
T.46N.
T.45N.
T.44N.
GOOSE
LAKE
WILLOW RANCH SUBBASIN
DAVIS CREEK SUBBASIN
FRANKLIN CREEK SUBBASIN
Willow Ranch
Davis Creek
Mt. Vida
Fandango Pk.
Sugar Hill
Buck Mtn.
Crowder Mtn.
Round Mtn.
Lost Hill
North Star Basin
Howard Flat
Fender Flat
Cottonwood Flat
Harris Flat
Lower Bear Valley
Bear Valley
Bishop Resr.
Briles Resr.
Lower Resr.
Scammon Resr.
Benton Mdw.
Needle Grass Spr.
4720
4730
4740
4750
4760
4770
4780
4800
SURFACE WATER DRAINAGE TO SURPRISE VALLEY
SURFACE WATER DRAINAGE TO ALTURAS BASIN
ALTURAS GROUND WATER BASIN BOUNDARY
SURFACE WATER DRAINAGE TO ALTURAS BASIN
ROAD SYMBOLS
U.S. HIGHWAY
STATE SIGN ROUTE
STATE HIGHWAY ROUTE
COUNTY ROAD
N


OREGON
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
GLENN
MENDOCINO
COLUSA
SIERRA
NEVADA
SONOMA
NAPA
SOLANO
MARIN
CONTRA COSTA
ALAMEDA
4
5
6
8
11
12
15
18
19
22
25
28
31

KEY TO PLATES

LEGEND

— — — GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN SECOND DAVIS CREEK CONFINED AQUIFER

— — — GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS, DASHED WHERE INFERRED.

🟥 UPLAND RECHARGE AREAS

🟦 AREA WHERE GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS ARE ABOVE GROUND SURFACE

━ ━ GROUND WATER BASIN BOUNDARY

━ • ━ GROUND WATER SUBBASIN BOUNDARY

— — — SURFACE WATER DRAINAGE BOUNDARY

～ VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

NOTE
44% OF GOOSE LAKE VALLEY GROUND WATER BASIN IS IN OREGON
64% OF SURFACE DRAINAGE AREA TO GOOSE LAKE VALLEY IS IN OREGON.

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

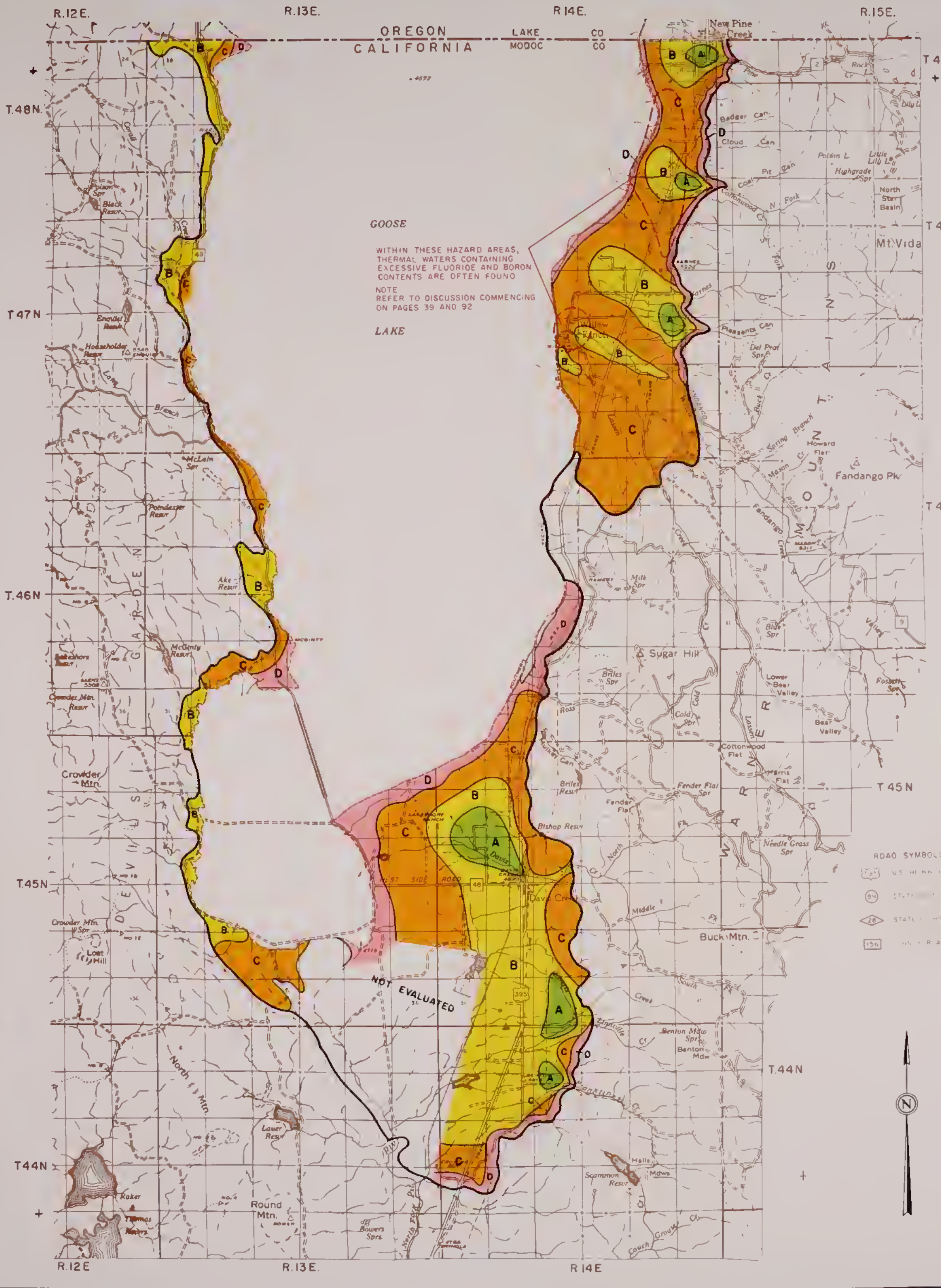
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS GOOSE LAKE VALLEY GROUND WATER BASIN

SPRING 1960

SCALE OF MILES
1 0 1 2


R.12E.
R.13E.
R.14E.
R.15E.
OREGON
CALIFORNIA
LAKE CO
MODOC CO
T.48N.
T.47N
T.46N
T.45N
T.44N
T 48N
T 47N
T 46N
T 45 N
T.44N
GOOSE
LAKE
WITHIN THESE HAZARD AREAS, THERMAL WATERS CONTAINING EXCESSIVE FLUORIDE AND BORON CONTENTS ARE OFTEN FOUND
NOTE
REFER TO DISCUSSION COMMENCING ON PAGES 39 AND 92
NOT EVALUATED
A
B
C
D
New Pine Creek
Mt. Vida
Fandango Pk
Sugar Hill
Buck Mtn.
Crowder Mtn.
Round Mtn.
Davis Cr.
WARNER MOUNTAINS
DEVILS GARDEN
N
R.12E
R.13E.
R.14E

OREGON
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
LAKE
COLUSA
SONOMA
NAPA
SOLANO
CONTRA COSTA
ALAMEDA
SAN FRANCISCO
6
9
13
16
20
23
26
29
32

KEY TO PLATES

LEGEND

A — BEST AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.

B — GOOD AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.

C — FAIR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock-watering purposes, but generally will be substantially less than "A" or "B" Zone areas.

D — POOR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock-watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.

WATER QUALITY HAZARD AREA

VALLEY FLOOR AREA BOUNDARY

ROAD SYMBOLS

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

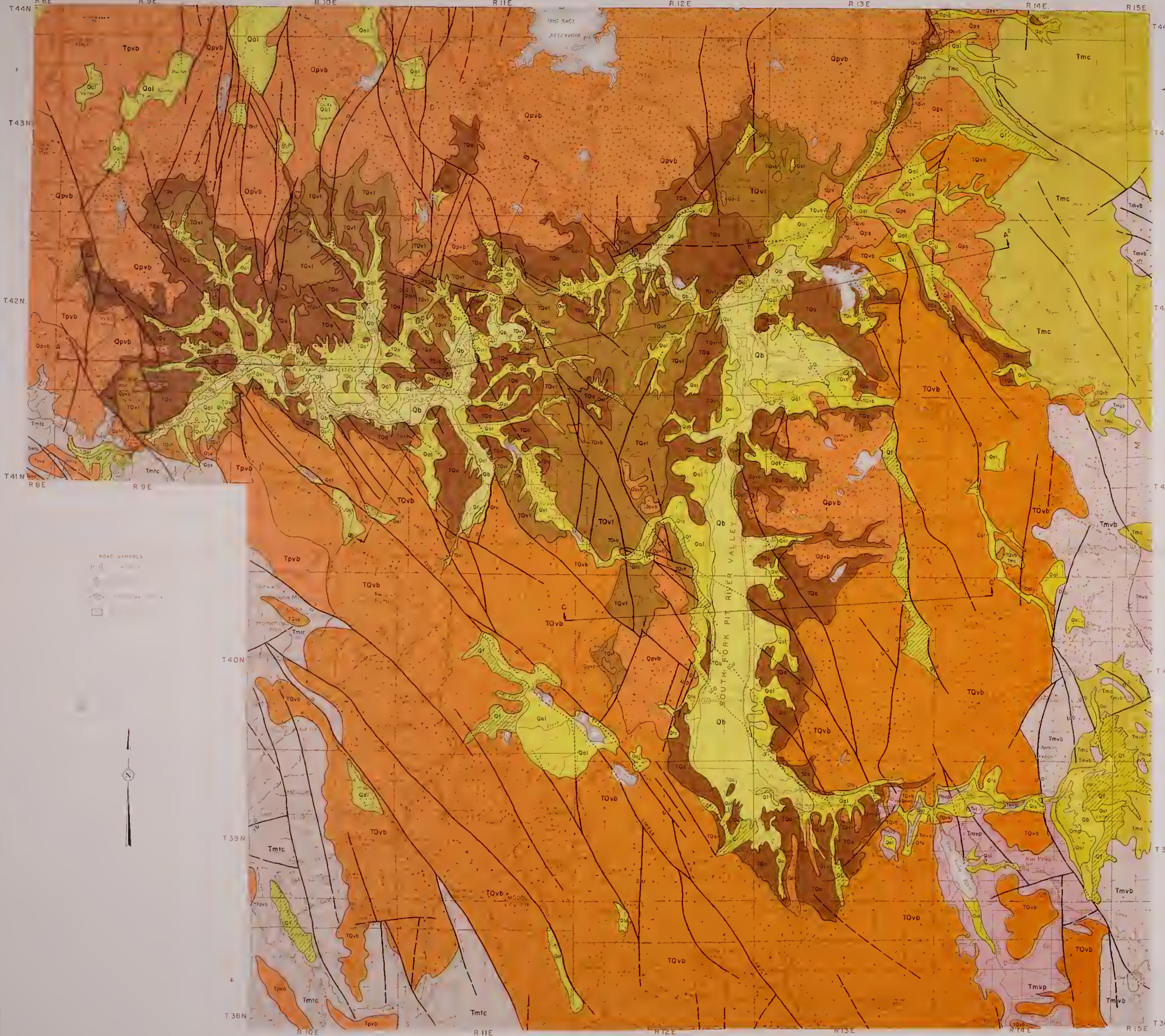
◆

POTENTIAL FOR DEVELOPMENT OF GROUND WATER GOOSE LAKE VALLEY GROUND WATER BASIN

1962

SCALE OF MILES
1 0 1 2

BULLETIN 98
PLATE 7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R 9E.
R 10E
R 11E
R 12E
R 13E
R 14E.
R 15E
T 44N
T 43N
T 42N.
T 41N
T 40N
T 39N
T 38N
BIG SAGE RESERVOIR
ALTURAS
SOUTH FORK PIT RIVER VALLEY
Horsehead Mtn
Hot Valley
Tpvb
Qpvb
Qol
Qb
Qf
Qps
TQa
TQvl
TQvb
Tmc
Tmvb
Tmtc
Tmvp
ROAD SYMBOLS
N

O R E G O N
10
14
21
24
27
30
17
KEY TO PLATES

GEOLOGIC UNITS

SEDIMENTARY ROCKS

Era	Period	Epoch	Symbol	Unit
CENOZOIC	QUATERNARY	Recent	Qd	SAND DUNES
			Qs	SAND AND SILT DEPOSITS
			Qr	RECENT LAKE DEPOSITS
			Qls	LANDSLIDES
			Qta	TALUS
			Qmp	MUCK AND PEAT DEPOSITS
			Qb	BASIN DEPOSITS
			Qoi	INTERMEDIATE ALLUVIAL DEPOSITS
			Qf	ALLUVIAL FANS
			Qt	TERRACES
		Pleistocene	Qps	NEAR-SHORE DEPOSITS
			Qpl	PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
			Qgo	GLACIAL OUTWASH
			Qpm	MORAINES
			TQa	ALTURAS FORMATION
			TQb	BIEBER FORMATION
	TERTIARY	Plio-Pleis	Tpl	PLIOCENE LAKE DEPOSITS
		Mio-Plio	Tfc	FORTY-NINE CAMP FORMATION
		Eoc-Oligo	TEdc	DEEP CREEK CONGLOMERATE
		Eoc	Tag	AURIFEROUS GRAVELS
		Undivided	Tgr	GOLD RUN SANDSTONE
			Tfs	FORT SAGE SANDSTONE

VOLCANIC ROCKS

Era	Period	Epoch	Symbol	Unit
CENOZOIC	QUATERNARY	Recent	Qrb	RECENT BASALT
		Pleistocene	Qpc	PLEISTOCENE AND RECENT CINDER CONES
			Qpvb	PLEISTOCENE BASALT
			Qpvp	PLEISTOCENE PYROCLASTIC ROCKS
			TQvb	PLIO-PLEISTOCENE BASALT
			TQvp	PLIO-PLEISTOCENE PYROCLASTIC ROCKS
			Tws	WARM SPRINGS TUFF
	TERTIARY	Pliocene	Tpvb	PLIOCENE BASALT
			Tpva	PLIOCENE ANDESITE
			Tpvp	PLIOCENE PYROCLASTIC ROCKS
		Miocene	Tmv	MIOCENE VOLCANIC ROCKS, UNDIVIDED
			Tmvb	MIOCENE BASALT
			Tmva	MIOCENE ANDESITE
			Tmvp	MIOCENE PYROCLASTIC ROCKS
			Tmtc	TURNER CREEK FORMATION
			Tmc	CEDARVILLE SERIES
		Undivided	Tr	RHYOLITE
			Tbv	BIG VALLEY MOUNTAIN VOLCANIC SERIES
			Tsv	SIERRAN VOLCANIC ROCKS, UNDIVIDED
			Tsvb	SIERRAN BASALT
			Tsva	SIERRAN ANDESITE
			Tsvp	SIERRAN PYROCLASTIC ROCKS

BASEMENT COMPLEX

Era	Symbol	Unit
MESOZOIC	Mgr	GRANITIC ROCKS
PALEOZOIC	Pzm	METAMORPHIC ROCKS

NOTE
COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET. FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES, REFER TO STRATIGRAPHIC COLUMN (TABLE 1)

SYMBOLS

Symbol	Meaning
———	GEOLOGIC CONTACT
—U/D—	FAULT. DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
....	CONCEALED FAULT
⌴	LOCATION OF GEOLOGIC SECTION

GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

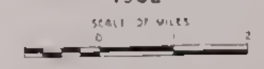
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

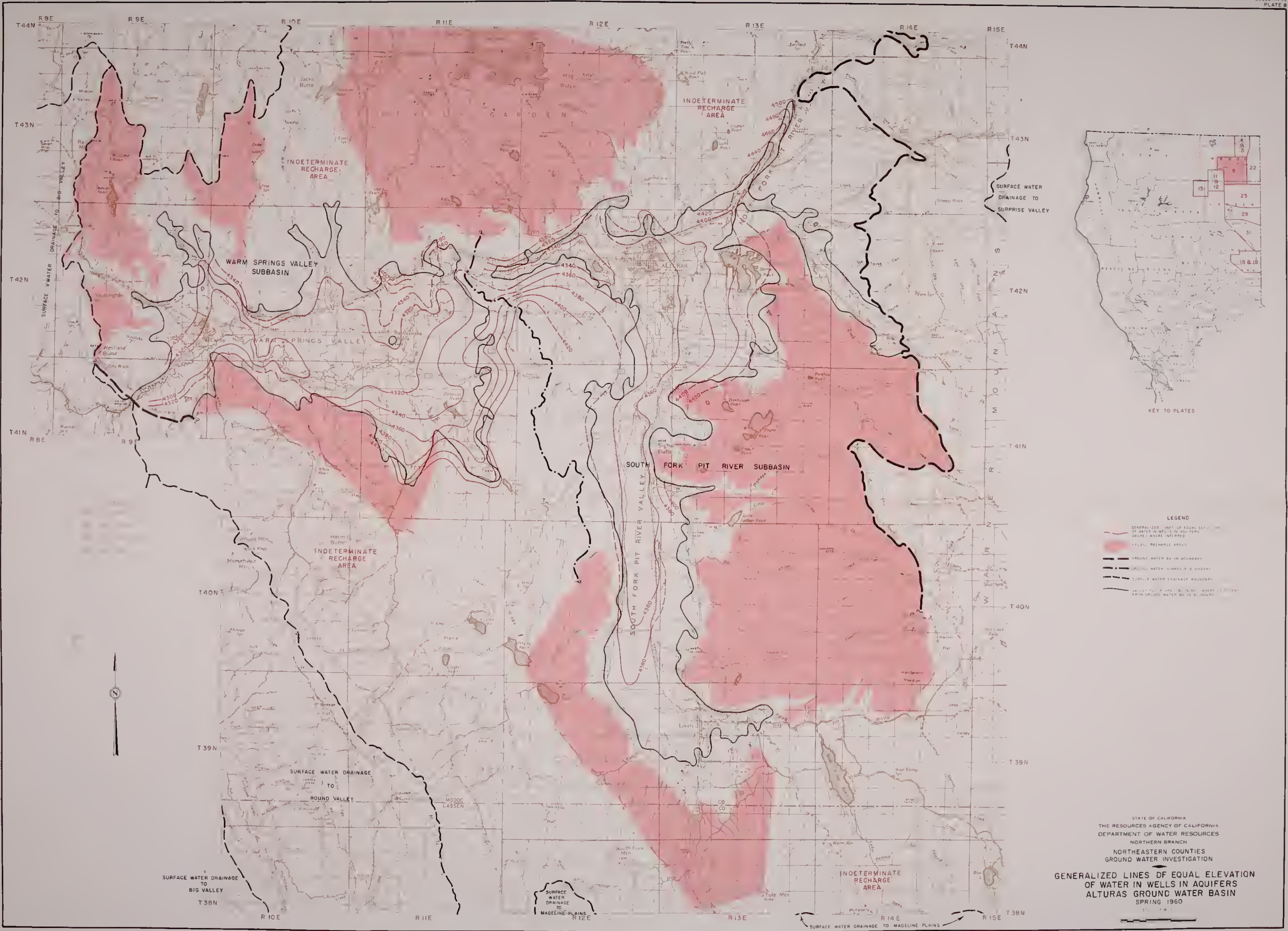
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

AREAL GEOLOGY
ALTURAS GROUND WATER BASIN

1962


SCALE OF MILES
0
1
2

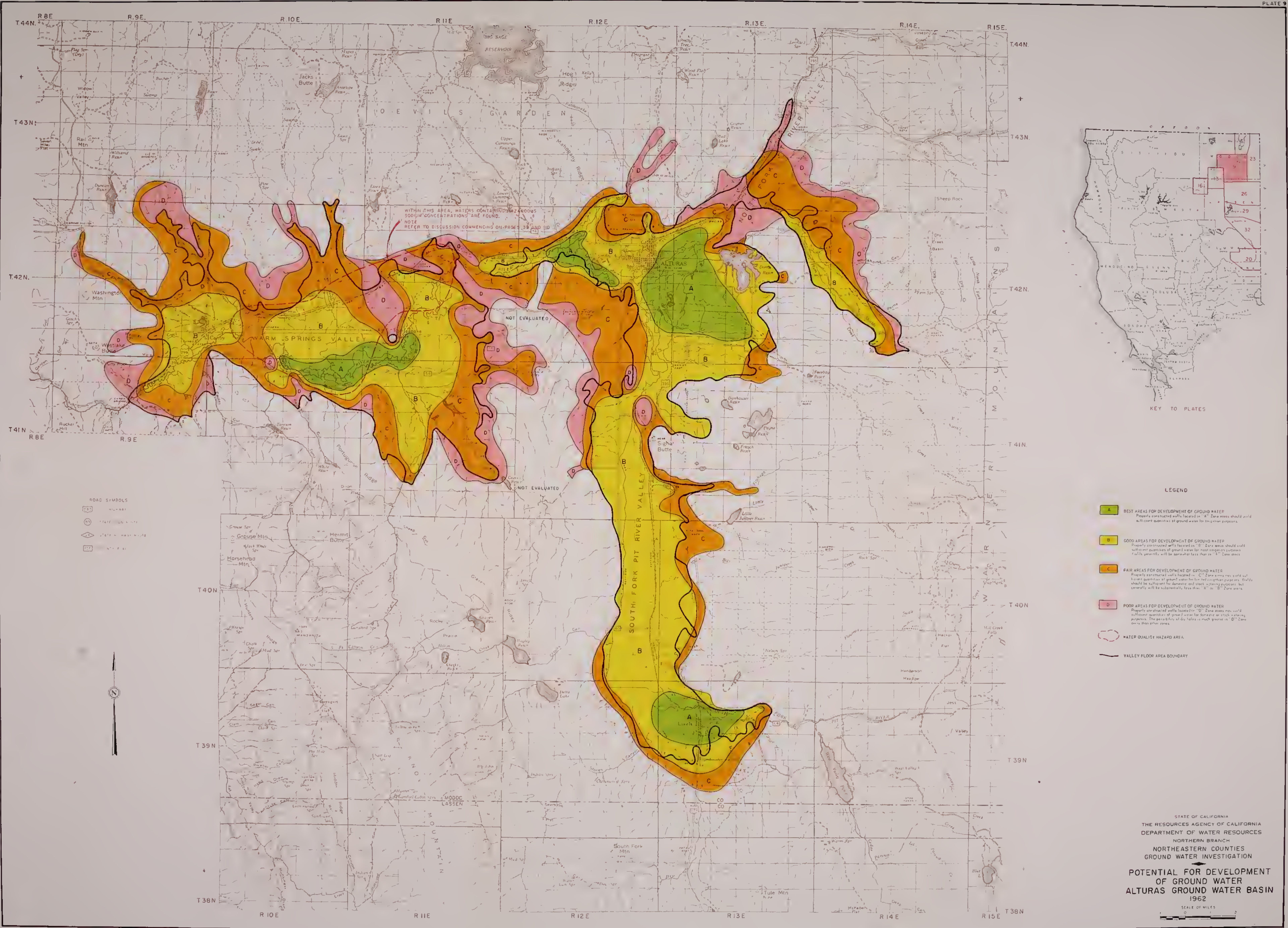

R 9E
R 9E
R 10E
R 11E
R 12E
R 13E
R 14E
R 15E
T44N
T43N
T42N
T41N
T40N
T39N
T38N
R 8E
R 10E
R 11E
R 12E
R 13E
R 14 E
R 15E
INDETERMINATE RECHARGE AREA
INDETERMINATE RECHARGE AREA
INDETERMINATE RECHARGE AREA
INDETERMINATE RECHARGE AREA
WARM SPRINGS VALLEY SUBBASIN
WARM SPRINGS VALLEY
SOUTH FORK PIT RIVER SUBBASIN
SOUTH FORK PIT RIVER VALLEY
NORTH FORK PIT RIVER
ALTURAS
DEVILS GARDEN
WARNER MOUNTAINS
SURFACE WATER DRAINAGE TO BIG VALLEY
SURFACE WATER DRAINAGE TO SURPRISE VALLEY
SURFACE WATER DRAINAGE TO ROUND VALLEY
SURFACE WATER DRAINAGE TO BIG VALLEY
SURFACE WATER DRAINAGE TO MADELINE PLAINS
SURFACE WATER DRAINAGE TO MADELINE PLAINS
MODOC
LASSEN
Likely
Canby
Signal Butte
Westlake Butte
Rattlesnake Butte
Hermit Butte
Jacks Butte
Sheep Rock
South Fork Mtn
Tule Mtn
4300
4320
4340
4360
4380
4400
4420
4440
4460
4480
4500
N
LEGEND
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS DASHED WHERE INFERRED
RECHARGE AREAS
GROUND WATER BASIN BOUNDARY
GROUND WATER SUBBASIN BOUNDARY
SURFACE WATER DRAINAGE BOUNDARY
FROM GROUND WATER BASIN BOUNDARY
KEY TO PLATES
4
5
6
8
11
12
15
22
25
28
31
18
19

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS ALTURAS GROUND WATER BASIN

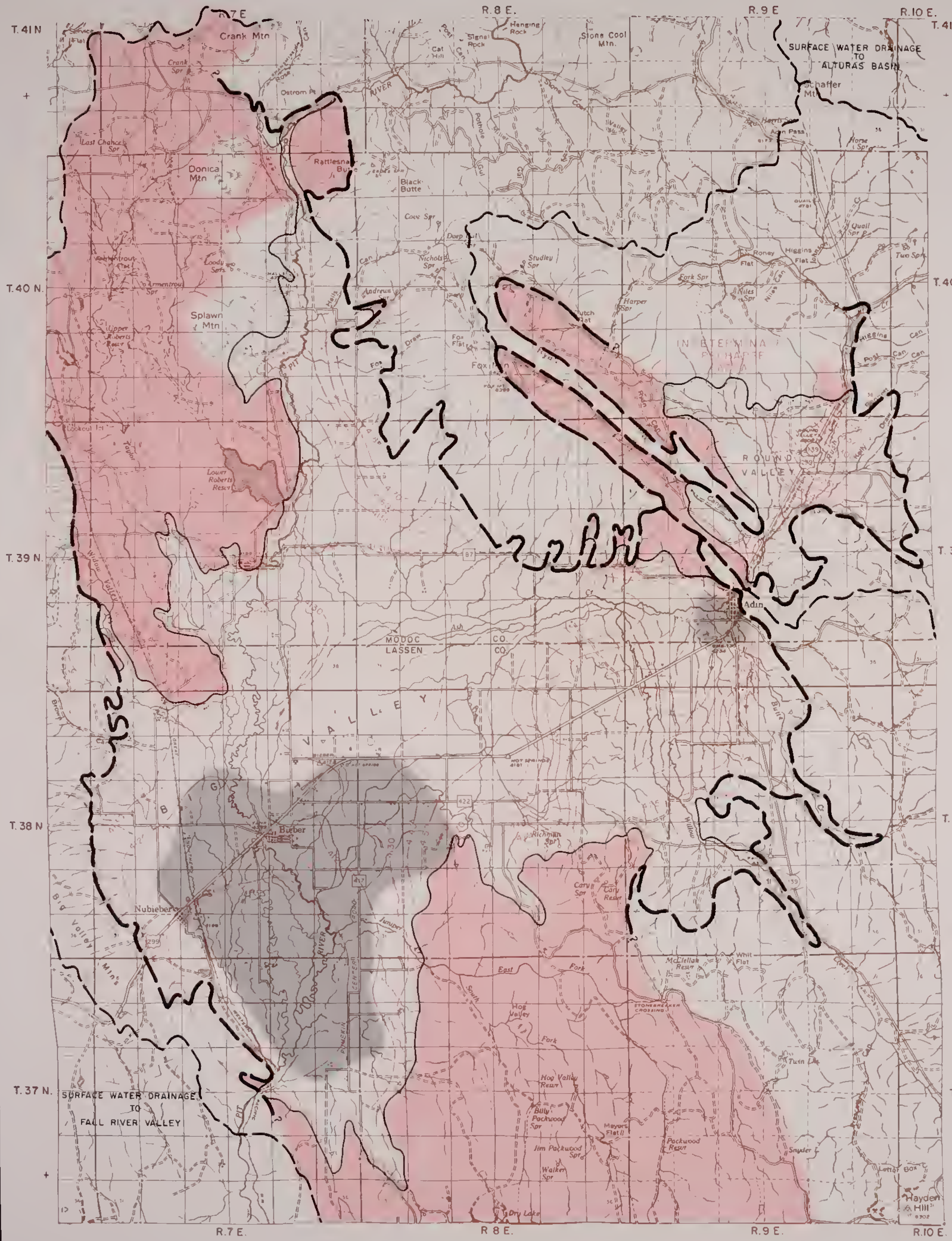
SPRING 1960


T.44N.
T.43N.
T.42N.
T.41N.
T40N
T39N
T38N
R.8E
R.9E.
R.10E.
R.11E
R.12E
R.13E.
R.14E.
R.15E.
BIG SAGE RESERVOIR
Jacks Butte
Hog Ridge
D E V I L S   G A R D E N
WITHIN THIS AREA, WATERS CONTAINING HAZARDOUS SODIUM CONCENTRATIONS ARE FOUND.
NOTE
REFER TO DISCUSSION COMMENCING ON PAGES 39 AND 110
WARM SPRINGS VALLEY
Washington Mtn
Westlake Butte
ALTURAS
PIT RIVER
NORTH FORK PIT RIVER VALLEY
NOT EVALUATED
NOT EVALUATED
SOUTH FORK PIT RIVER VALLEY
Likely
Signal Butte
Grouse Mtn
Horsehead Mtn
Hermit Butte
South Fork Mtn
Tule Mtn
MODOC
LASSEN
W A R N E R   M O U N T A I N S
A
B
C
D
ROAD SYMBOLS
KEY TO PLATES
OREGON
SISKIYOU
MODOC
LASSEN
16
23
25
26
29
32
20
LEGEND
A
BEST AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.
B
GOOD AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.
C
FAIR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock watering purposes but generally will be substantially less than "A" or "B" Zone areas.
D
POOR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.
WATER QUALITY HAZARD AREA
VALLEY FLOOR AREA BOUNDARY
SCALE OF MILES
1
0
1
2

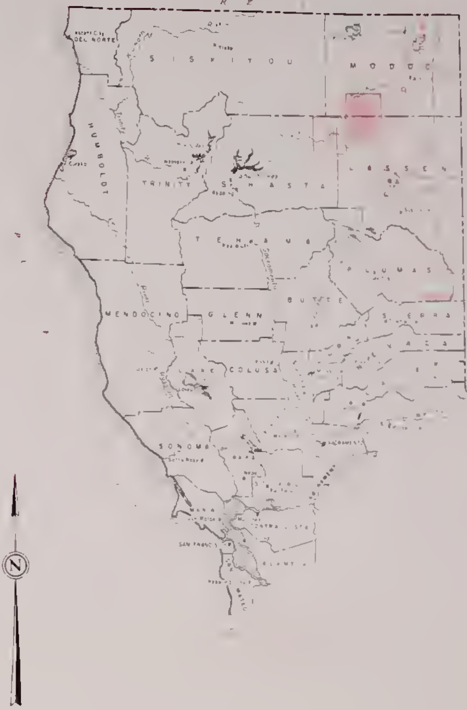
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

POTENTIAL FOR DEVELOPMENT
OF GROUND WATER
ALTURAS GROUND WATER BASIN
1962


R.7E.
R.8E.
R.9E.
R.10E.
T.41N
T.40N.
T.39N.
T.38N
T.37N.
Crank Mtn
SURFACE WATER DRAINAGE TO ALTURAS BASIN
Schaffer Mtn
Last Chance Spr
Donica Mtn
Rattlesnake Butte
Black Butte
Splawn Mtn
Lower Roberts Resvr
Upper Roberts Resvr
INDETERMINATE RECHARGE AREA
ROUND VALLEY
Adin
MODOC CO.
LASSEN CO.
BIG VALLEY
Bieber
Nubieber
PIT RIVER
Hayden Hill
SURFACE WATER DRAINAGE TO FALL RIVER VALLEY

ROAD SYMBOLS
- U. S. HIGHWAY
- 89 STATE SIGN ROUTE
- 28 STATE HIGHWAY ROUTE
- 156 COUNTY ROAD


N
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
COLUSA
SONOMA

LEGEND

- GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS DASHED WHERE INFERRED
- 🟥 UPLAND RECHARGE AREAS
- ▨ AREA FOR WHICH LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS IS SHOWN (See Plate 2
- ▬ ▬ GROUND WATER BASIN BOUNDARY
- — — — SURFACE WATER DRAINAGE BOUNDARY
- ─── VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

NOTE: GROUND WATER EXISTS IN THE NEAR-SURFACE AQUIFERS IN CONDITIONS RANGING FROM UNCONFINED TO CONFINED

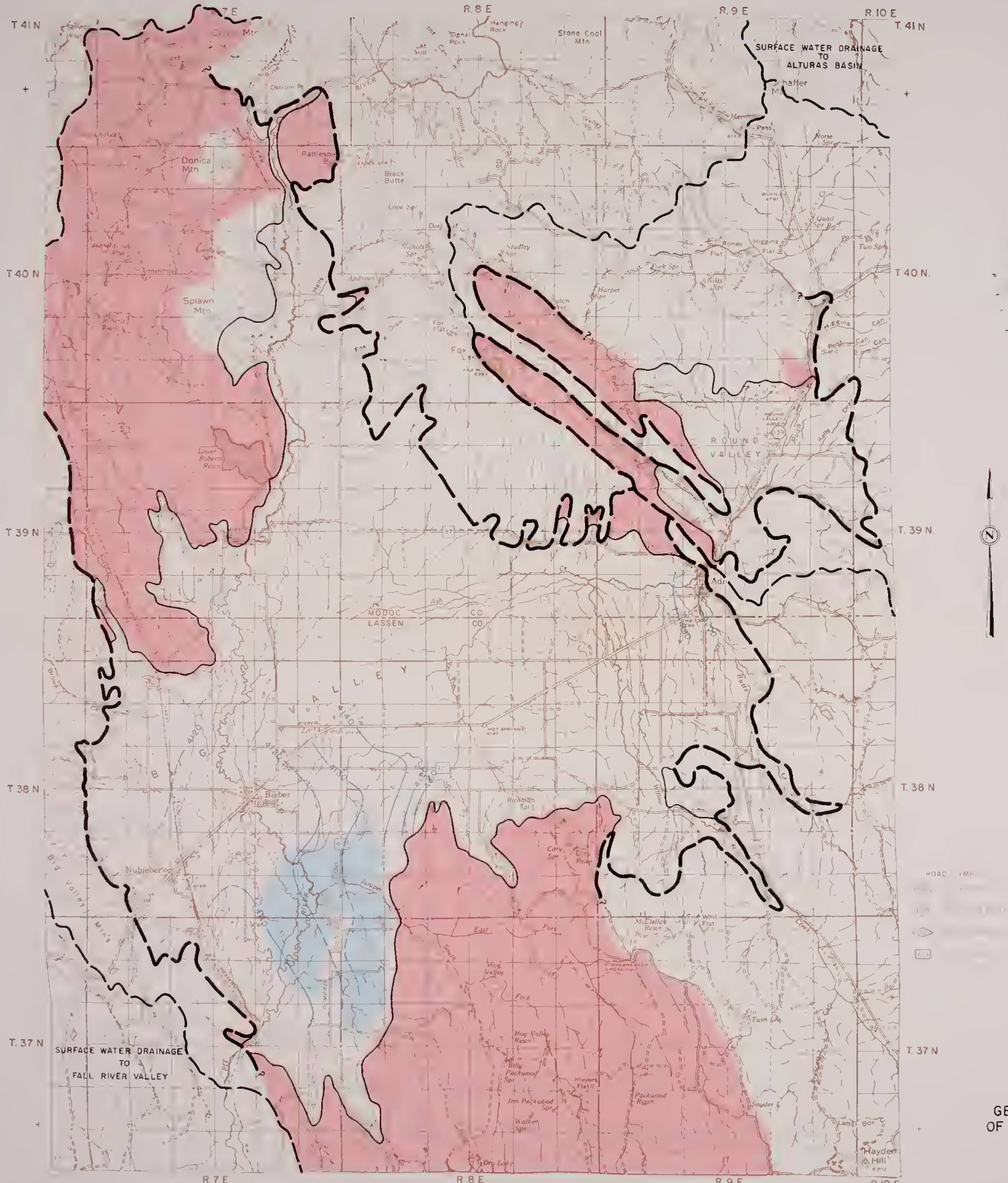
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS BIG VALLEY AND ROUND VALLEY GROUND WATER BASINS

SPRING 1960

SCALE OF MILES
0 2


R.7 E
R.8 E
R.9 E
R.10 E
T 41 N
T 40 N
T 39 N
T 38 N
T. 37 N
SURFACE WATER DRAINAGE TO ALTURAS BASIN
SURFACE WATER DRAINAGE TO FALL RIVER VALLEY
ROUND VALLEY
BIG VALLEY
MODOC CO
LASSEN CO
Donica Mtn
Splawn Mtn
Black Butte
Rattlesnake B
Stone Coal Mtn
Signal Rock
Hanging Rock
Schaffer Mt
Roney Flat
Higgins Flat
Bieber
Nubieber
Adin
Hog Valley
Hayden Hill
Lower Roberts Resvr
Packwood Resvr
McClellan Resvr
Whit Flat
Twin Lks
Dry Lake
N

OREGON
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
MENDOCINO
GLENN
SIERRA
COLUSA
SONOMA
MARIN
ALAMEDA
CONTRA COSTA
12
22
15

KEY TO PLATE

LEGEND

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS, DASHED WHERE INFERRED

🟥 UPLAND RECHARGE AREAS

🟦 AREA WHERE GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS ARE ABOVE GROUND SURFACE

GROUND WATER BASIN BOUNDARY

SURFACE WATER DRAINAGE BOUNDARY

VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

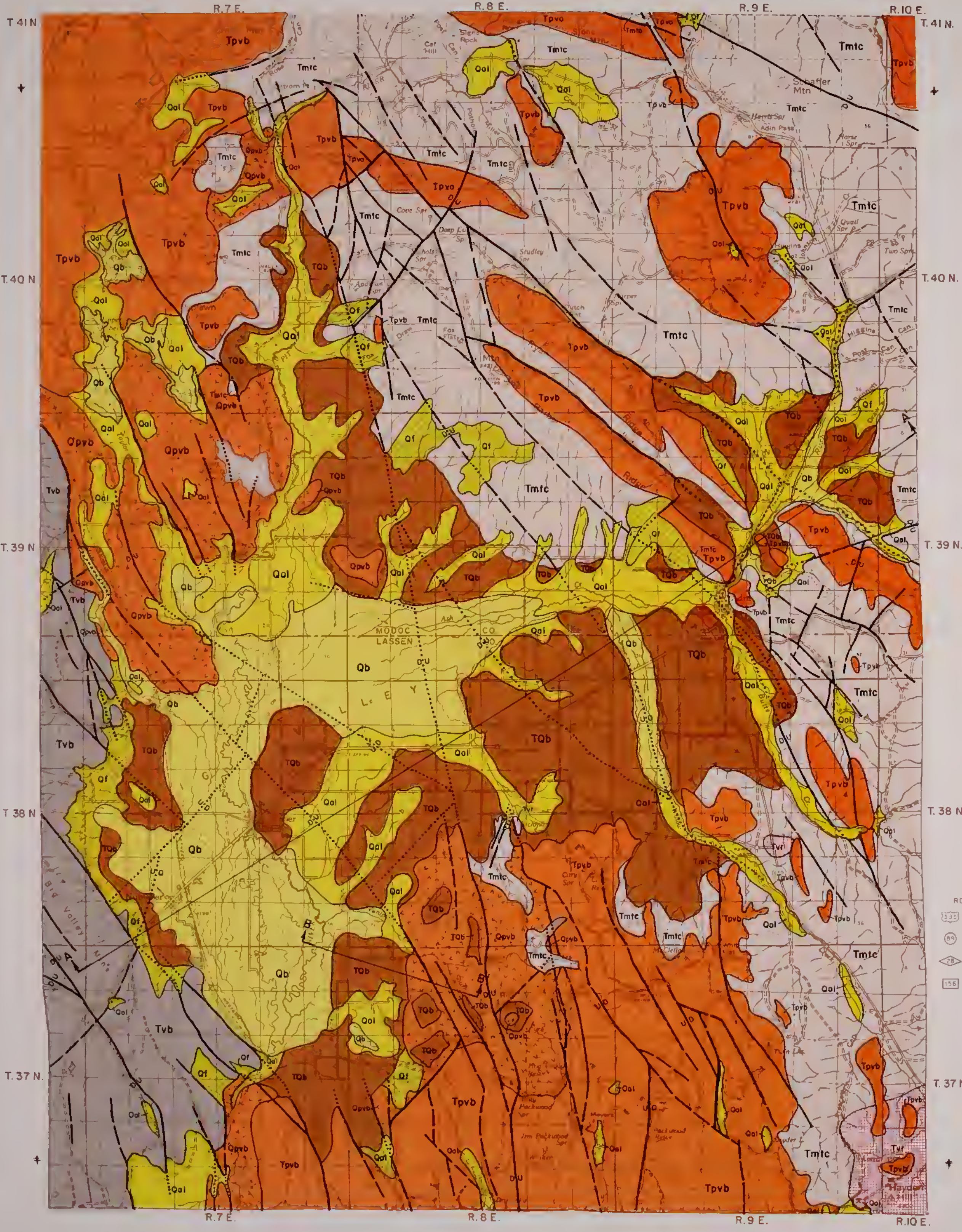
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

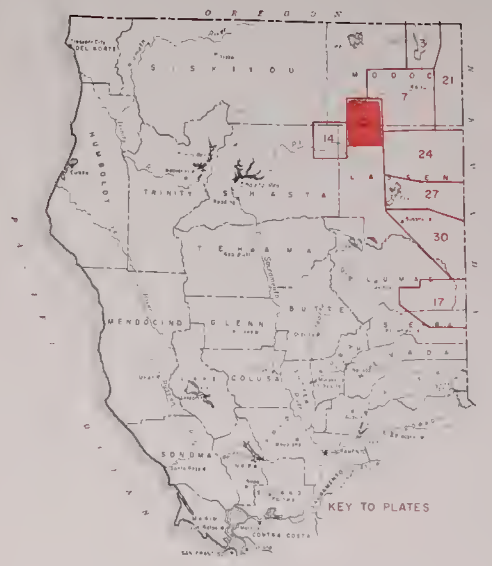
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS BIG VALLEY AND ROUND VALLEY GROUND WATER BASINS

SPRING 1960


R.7 E.
R.8 E.
R.9 E.
R.10 E.
T. 41 N.
T. 40 N.
T. 39 N.
T. 38 N.
T. 37 N.
MODOC
LASSEN
BIG VALLEY
Schaffer Mtn
Adin Pass
Stone Mtn
Sierra Rock
Cal Hill
Cove Spr
Deep Cr
Studley Spr
Two Spr
Quail Spr
Horse Spr
Ash Cr
Pit R
Packwood Spr
Hayden Hill
Tpvb
Tmtc
Qal
Qb
TQb
Qpvb
Qf
Tvb
Tvr
Qpvp


OREGON
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
COLUSA
SONOMA
NAPA
MARIN
CONTRA COSTA
14
21
24
27
30
17
7
3

KEY TO PLATES

GEOLOGIC UNITS

SEDIMENTARY ROCKS

CENOZOIC	QUATERNARY	Recent	Qsd	SAND DUNES
			Qs	SAND AND SILT DEPOSITS
			Ql	RECENT LAKE DEPOSITS
			Qls	LANDSLIDES
			Qta	TALUS
			Qmp	MUCK AND PEAT DEPOSITS
			Qb 🟨	BASIN DEPOSITS
			Qal 🟨	INTERMEDIATE ALLUVIAL DEPOSITS
			Qf 🟨	ALLUVIAL FANS
			Qt	TERRACES
		Pleistocene	Qns	NEAR-SHORE DEPOSITS
			Qpl	PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
			Qgo	GLACIAL OUTWASH
			Qgm	MORAINES
			TQa	ALTURAS FORMATION
			TQb 🟫	BIEBER FORMATION
	TERTIARY	Pliocene	Tpl	PLIOCENE LAKE DEPOSITS
		Miocene	Tmfc	FORTY-NINE CAMP FORMATION
		Oligocene	TΦdc	DEEP CREEK CONGLOMERATE
		Eocene	Tag	AURIFEROUS GRAVELS
		Undivided	Tgs	GOLD RUN SANDSTONE
			Tfs	FORT SAGE SANDSTONE

VOLCANIC ROCKS

CENOZOIC	QUATERNARY	Recent	Qrvb	RECENT BASALT
			✳	PLEISTOCENE AND RECENT CINDER CONES
		Pleistocene	Qpvb 🟧	PLEISTOCENE BASALT
			Qpvp	PLEISTOCENE PYROCLASTIC ROCKS
			TQvb	PLIO-PLEISTOCENE BASALT
			TQvp	PLIO-PLEISTOCENE PYROCLASTIC ROCKS
			TQst	WARM SPRINGS TUFF
	TERTIARY	Pliocene	Tpvb 🟧	PLIOCENE BASALT
			Tpva 🟧	PLIOCENE ANDESITE
			Tpvp	PLIOCENE PYROCLASTIC ROCKS
		Miocene	Tmv	MIOCENE VOLCANIC ROCKS, UNDIVIDED
			Tmvb	MIOCENE BASALT
			Tmva	MIOCENE ANDESITE
			Tmvp	MIOCENE PYROCLASTIC ROCKS
			Tmtc	TURNER CREEK FORMATION
			Tmc	CEDARVILLE SERIES
		Undivided	Tvr ▦	RHYOLITE
			Tvb ▩	BIG VALLEY MOUNTAIN VOLCANIC SERIES
			Tsv	SIERRAN VOLCANIC ROCKS, UNDIVIDED
			Tsvb	SIERRAN BASALT
			Tsva	SIERRAN ANDESITE
			Tsvp	SIERRAN PYROCLASTIC ROCKS

BASEMENT COMPLEX

MESOZOIC	JKgr	GRANITIC ROCKS
PALEOZOIC	pKm	METAMORPHIC ROCKS

NOTE

COLOR IN LEGEND BOX INDICATES [illegible] UNIT THAT APPEARS ON THIS SHEET

FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES REFER TO STRATIGRAPHIC COLUMN (TABLE 1)

ROAD SYMBOLS

395	U.S. HIGHWAY
89	STATE SIGN ROUTE
28	STATE HIGHWAY ROUTE
156	COUNTY ROAD

SYMBOLS

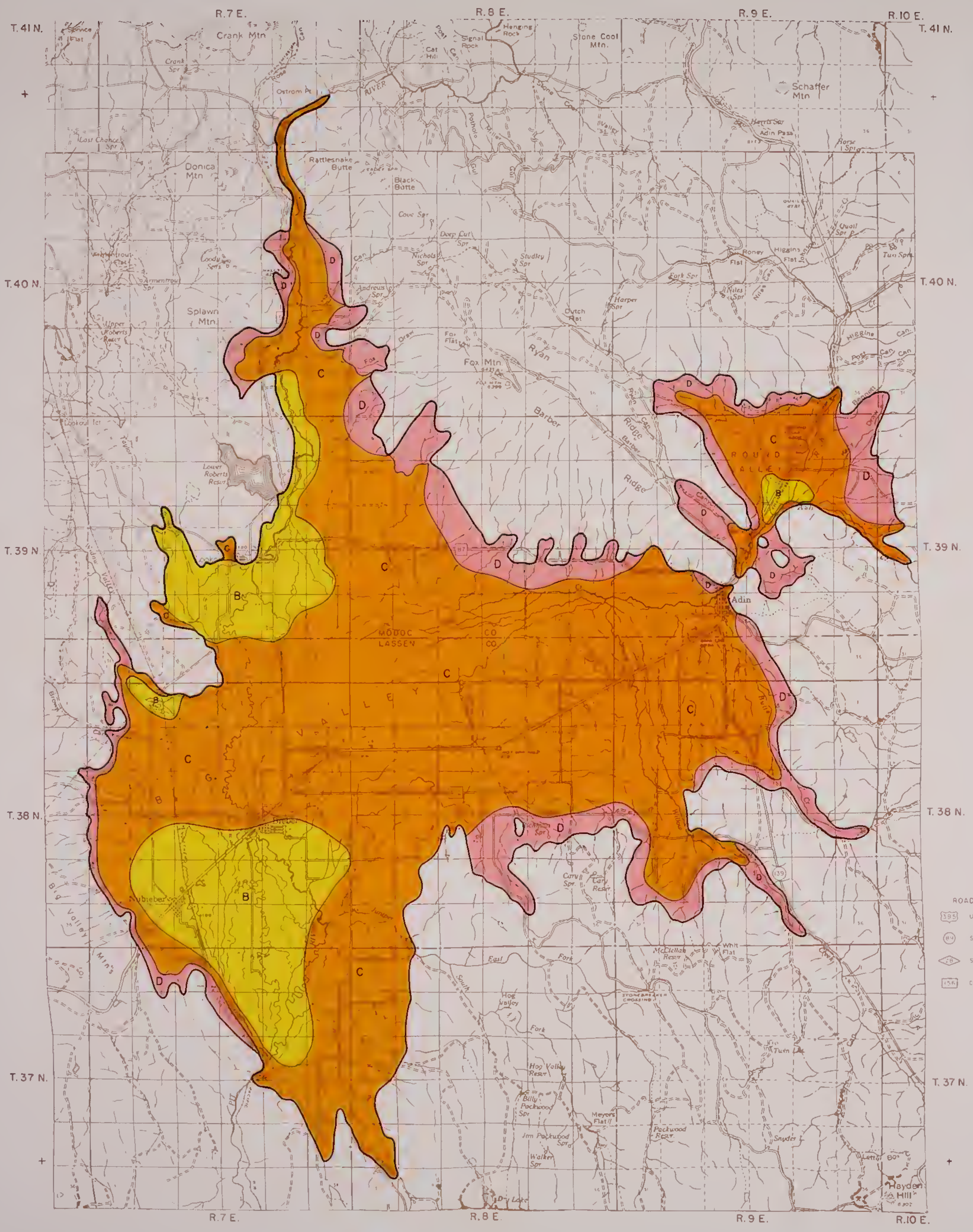
―	GEOLOGIC CONTACT
U/D	FAULT, DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
⋯	CONCEALED FAULT
A ⌴ A	LOCATION OF GEOLOGIC SECTION

GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
BIG VALLEY AND ROUND VALLEY GROUND WATER BASINS
1962

SCALE OF MILES


R.7 E.
R.8 E.
R.9 E.
R.10 E.
T. 41 N.
T. 40 N.
T. 39 N.
T. 38 N.
T. 37 N.
Crank Mtn
Hanging Rock
Signal Rock
Cat Hill
Stone Coal Mtn.
Schaffer Mtn
Ostrom
RIVER
Lost Chance Spr
Donica Mtn
Rattlesnake Butte
Black Butte
Cove Spr
Deep Cut Spr
Nichols Spr
Studley Spr
Adin Pass
Horse Spr
Quail Spr
Higgins Flat
Roney Flat
Fork Spr
Andrews Spr
Splawn Mtn
Upper Roberts Resvr
Lower Roberts Resvr
Lookout
Fox Flat
Fox Mtn
Ryan
Dutch Flat
Harper Spr
Barber
Ridge
Higgins
ROUND VALLEY
Ash
Adin
MODOC CO
LASSEN CO
VALLEY
Bieber
Carr Spr
Carr Resr
McClellan Resvr
Whit Flat
East
Fork
Hog Valley
Hog Valley Resvr
Billy Packwood Spr
Meyers Flat
Jim Packwood Spr
Packwood Resvr
Walker Spr
Snyder
Turn
Dry Lake
Hayden Hill
Big Valley Mtn
A
B
C
D
139
299

OREGON
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
MENDOCINO
GLENN
SIERRA
NEVADA
COLUSA
SONOMA
NAPA
MARIN
SOLANO
CONTRA COSTA
SAN FRANCISCO
ALAMEDA
SACRAMENTO
6
23
9
13
16
26
29
32
20

KEY TO PLATES

LEGEND

A	BEST AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.
B	GOOD AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.
C	FAIR AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock-watering purposes, but generally will be substantially less than "A" or "B" Zone areas.
D	POOR AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock-watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.
—	VALLEY FLOOR AREA BOUNDARY

ROAD SYMBOLS

395	U.S. HIGHWAY
84	STATE SIGN ROUTE
28	STATE HIGHWAY ROUTE
156	COUNTY ROAD

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

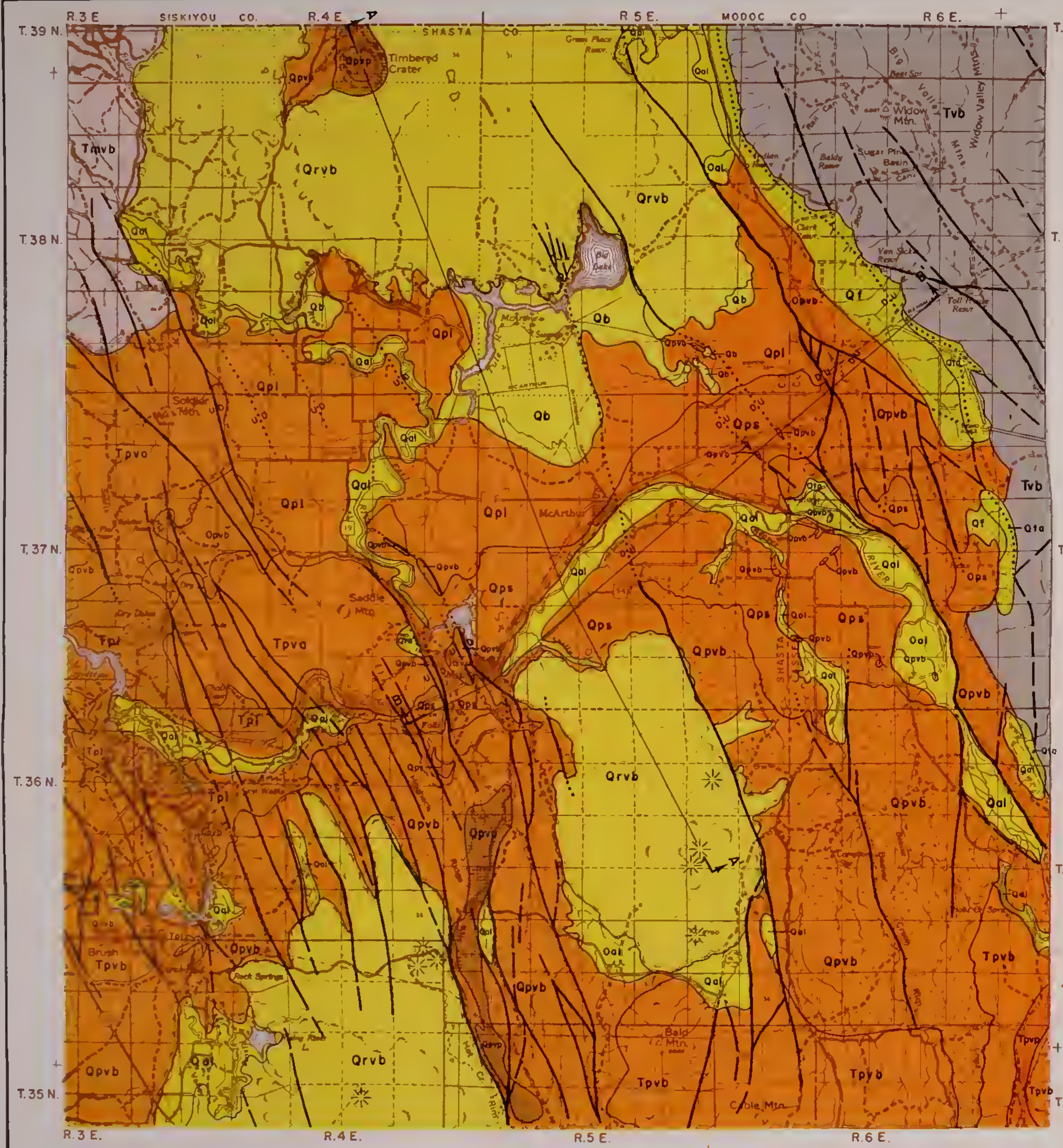
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

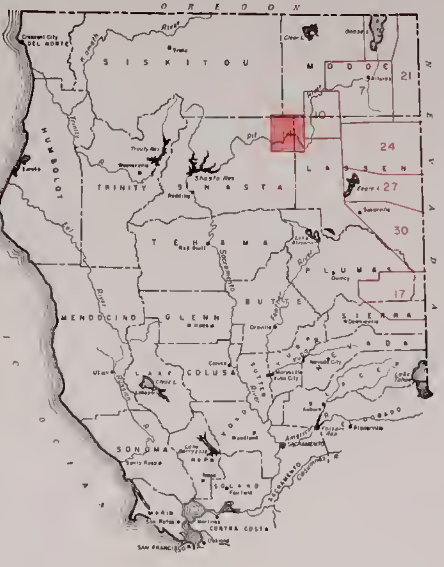
◆

POTENTIAL FOR DEVELOPMENT OF GROUND WATER BIG VALLEY AND ROUND VALLEY GROUND WATER BASINS

1962

SCALE OF MILES
1 0 1 2


R.3 E.
SISKIYOU CO.
R.4 E.
SHASTA CO.
R.5 E.
MODOC CO.
R.6 E.
T.39 N.
T.38 N.
T.37 N.
T.36 N.
T.35 N.
Timbered Crater
Widow Mtn.
Big Valley Mtns.
Widow Valley
Sugar Pine Basin
Big Lake
McArthur
Saddle Mtn.
Soldier Mtn.
Brush
Rock Springs
Bald Mtn.
Cable Mtn.
Fall River
Qrvb
Qpvb
Qpvp
Qpl
Qps
Qb
Qal
Qf
Qta
Tvb
Tmvb
Tpva
Tpvb
Tpvp
Tpl


OREGON
NEVADA
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
COLUSA
SONOMA
21
7
10
24
27
30
17

KEY TO PLATES

GEOLOGIC UNITS

SEDIMENTARY ROCKS

CENOZOIC	QUATERNARY	Recent	Qsd	SAND DUNES
			Qs	SAND AND SILT DEPOSITS
			Ql	RECENT LAKE DEPOSITS
			Qls	LANDSLIDES
			Qta	TALUS
			Qmp	MUCK AND PEAT DEPOSITS
			Qb	BASIN DEPOSITS
			Qal	INTERMEDIATE ALLUVIAL DEPOSITS
			Qf	ALLUVIAL FANS
			Qt	TERRACES
		Pleistocene	Qps	NEAR-SHORE DEPOSITS
			Qpl	PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
			Qpo	GLACIAL OUTWASH
			Qpm	MORAINES
			TQa	ALTURAS FORMATION
			TQb	BIEBER FORMATION
	TERTIARY	Plio-cene	Tpl	PLIOCENE LAKE DEPOSITS
		Mio-cene	Tmfc	FORTY-NINE CAMP FORMATION
		Oligo-cene	TØdc	DEEP CREEK CONGLOMERATE
		Eo-cene	Teg	AURIFEROUS GRAVELS
		Undivided	Tgs	GOLD RUN SANDSTONE
			Tfs	FORT SAGE SANDSTONE

VOLCANIC ROCKS

CENOZOIC	QUATERNARY	Recent	Qrb	RECENT BASALT
		Pleistocene	✳	PLEISTOCENE AND RECENT CINDER CONES
			Qpvb	PLEISTOCENE BASALT
			Qpvp	PLEISTOCENE PYROCLASTIC ROCKS
	TERTIARY	Pliocene	TQvb	PLIO-PLEISTOCENE BASALT
			TQvp	PLIO-PLEISTOCENE PYROCLASTIC ROCKS
			TQst	WARM SPRINGS TUFF
			Tpvb	PLIOCENE BASALT
			Tpva	PLIOCENE ANDESITE
			Tpvp	PLIOCENE PYROCLASTIC ROCKS
		Miocene	Tmv	MIOCENE VOLCANIC ROCKS, UNDIVIDED
			Tmvb	MIOCENE BASALT
			Tmva	MIOCENE ANDESITE
			Tmvp	MIOCENE PYROCLASTIC ROCKS
			Tmtc	TURNER CREEK FORMATION
			Tmc	CEDARVILLE SERIES
		Undivided	Tvr	RHYOLITE
			Tvb	BIG VALLEY MOUNTAIN VOLCANIC SERIES
			Tsv	SIERRAN VOLCANIC ROCKS, UNDIVIDED
			Tsvb	SIERRAN BASALT
			Tsva	SIERRAN ANDESITE
			Tsvp	SIERRAN PYROCLASTIC ROCKS

BASEMENT COMPLEX

MESOZOIC	JKgr	GRANITIC ROCKS
PALEOZOIC	pKm	METAMORPHIC ROCKS

SYMBOLS

———	GEOLOGIC CONTACT
$\overset{U}{\underset{D}{—}}$	FAULT, DASHED WHERE APPROXIMATELY LOCATED U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
·······	CONCEALED FAULT
A ⌴ A'	LOCATION OF GEOLOGIC SECTION

GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

NOTE

COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET

FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES, REFER TO STRATIGRAPHIC COLUMN (TABLE 12)

ROAD SYMBOLS

395	US HIGHWAY
89	STATE SIGN ROUTE
28	STATE HIGHWAY ROUTE
156	COUNTY ROAD

N

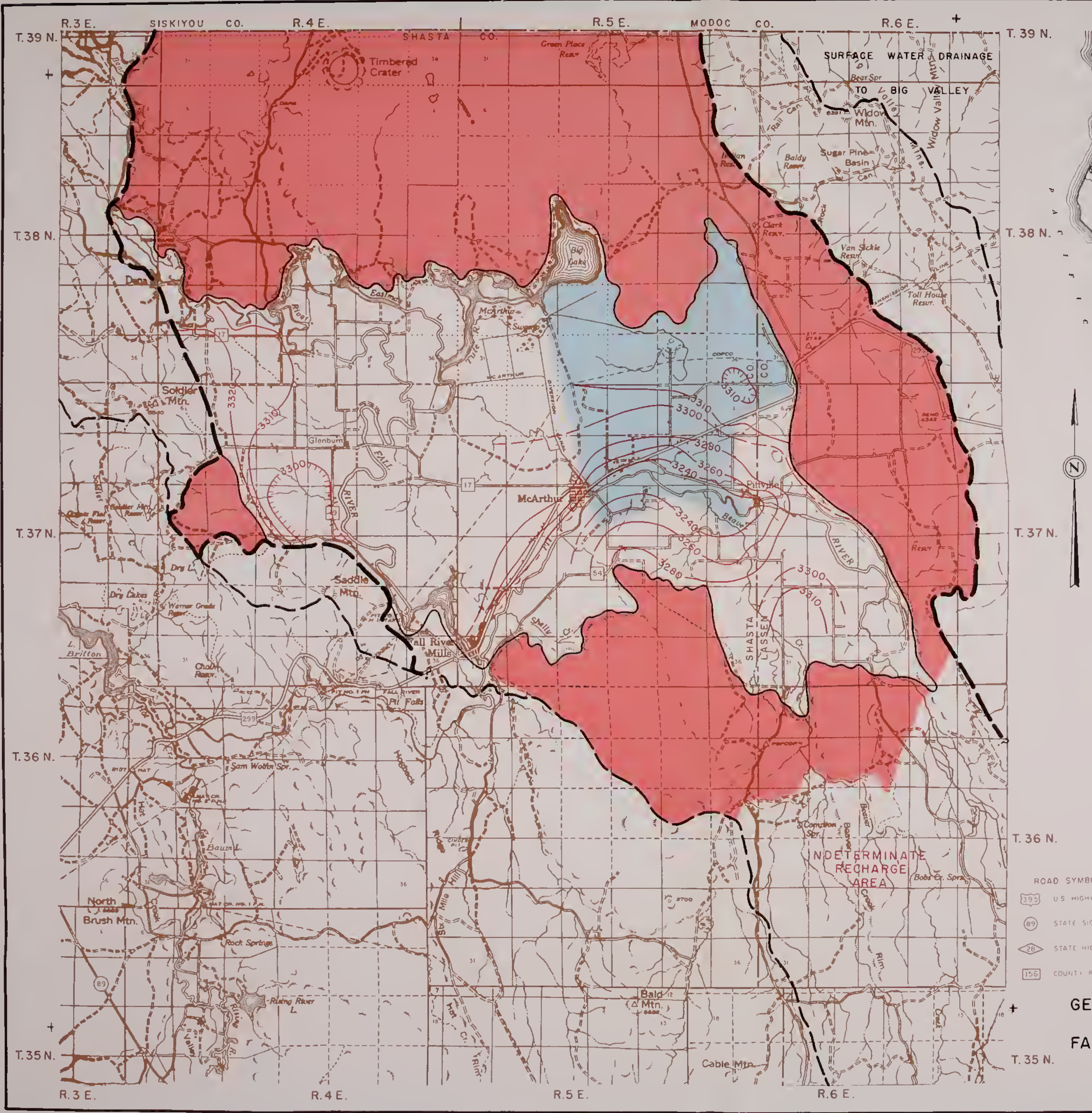
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

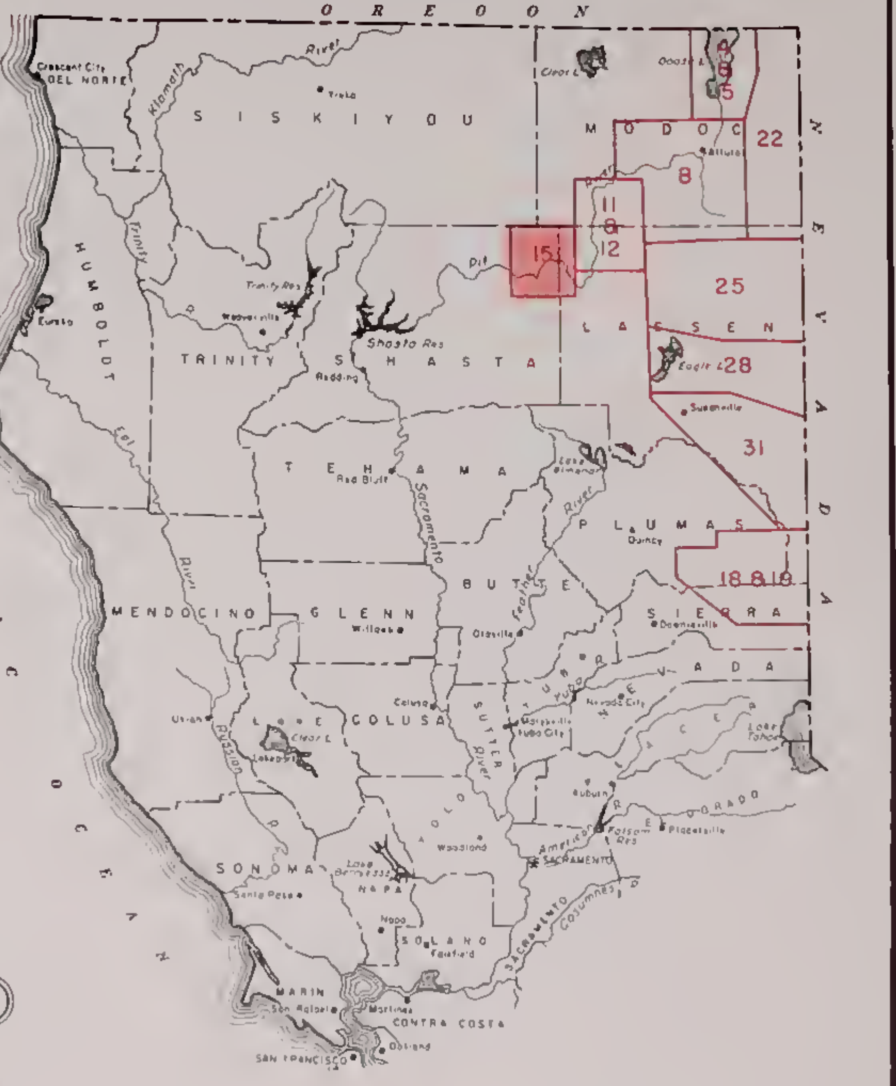
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
FALL RIVER VALLEY GROUND WATER BASIN

1962

SCALE OF MILES
0 1 2


R.3 E.
SISKIYOU CO.
R.4 E.
SHASTA CO.
R.5 E.
MODOC CO.
R.6 E.
T.39 N.
T.38 N.
T.37 N.
T.36 N.
T.35 N.
SURFACE WATER DRAINAGE TO BIG VALLEY
Timbered Crater
Green Place Resvr.
Widow Mtn.
Sugar Pine Basin
Baldy Resvr.
Indian Resvr.
Clark Resvr.
Van Sickle Resvr.
Toll House Resvr.
Big Lake
Soldier Mtn.
Glenburn
FALL RIVER
McArthur
Pittville
Beaver
PIT RIVER
Saddle Mtn.
Fall River Mills
Pit Falls
Dry Lakes
L. Britton
Cinder Resvr.
Sam Wolfin Spr.
Baum L.
North Brush Mtn.
Rock Springs
Rising River L.
Six Mile Hill
Hat Cr.
Bald Mtn.
Cable Mtn.
Compton Spr.
Bobs Cr. Spr.
Rim
SHASTA
LASSEN
INDETERMINATE RECHARGE AREA
3320
3310
3300
3280
3260
3240
N


OREGON
NEVADA
PACIFIC OCEAN
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
COLUSA
LAKE
SONOMA
NAPA
SOLANO
MARIN
CONTRA COSTA
SACRAMENTO
EL DORADO
15
8
9
11
12
22
25
28
31
18 & 19

KEY TO PLATES

LEGEND

— — GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS, DASHED WHERE INFERRED

🟥 UPLAND RECHARGE AREAS. UPLAND RECHARGE AREA EXTENDS APPROXIMATELY 25 MILES NORTHWEST OF MAP COVERAGE AND COVERS APPROXIMATELY 195 SQUARE MILES

🟦 AREA WHERE GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS ARE ABOVE GROUND SURFACE

▬ ▬ GROUND WATER BASIN BOUNDARY.

— — — SURFACE WATER DRAINAGE BOUNDARY

—— VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

NOTE 44% OF SURFACE WATER DRAINAGE AREA IS TO NORTH OF MAP AREA
33% OF SURFACE WATER DRAINAGE AREA IS TO SOUTHEAST OF MAP AREA
COMPLETE SURFACE WATER DRAINAGE BOUNDARY OF FALL RIVER VALLEY IS SHOWN ON PLATE I

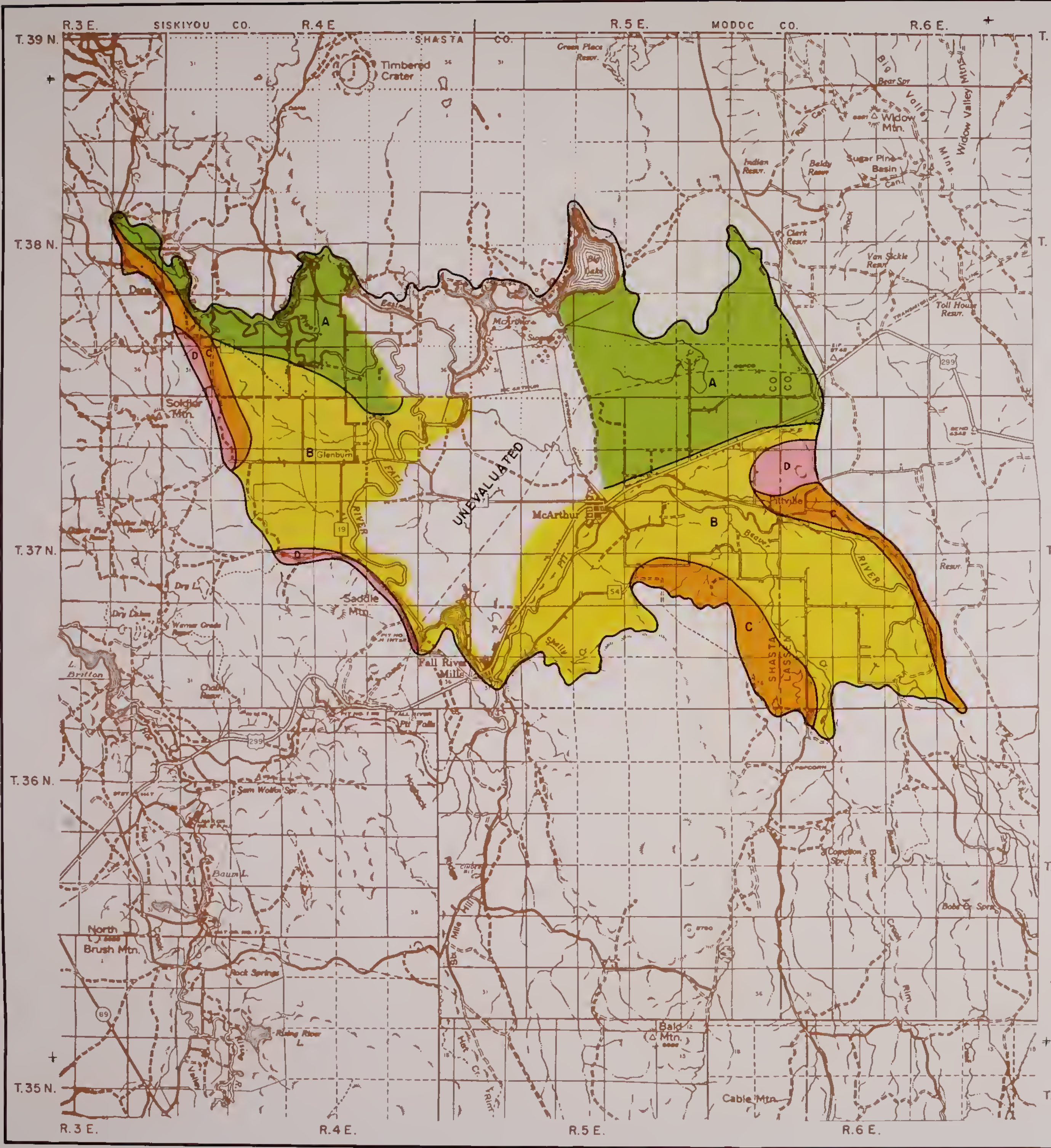
ROAD SYMBOLS
395 U.S. HIGHWAY
89 STATE SIGN ROUTE
28 STATE HIGHWAY ROUTE
156 COUNTY ROAD

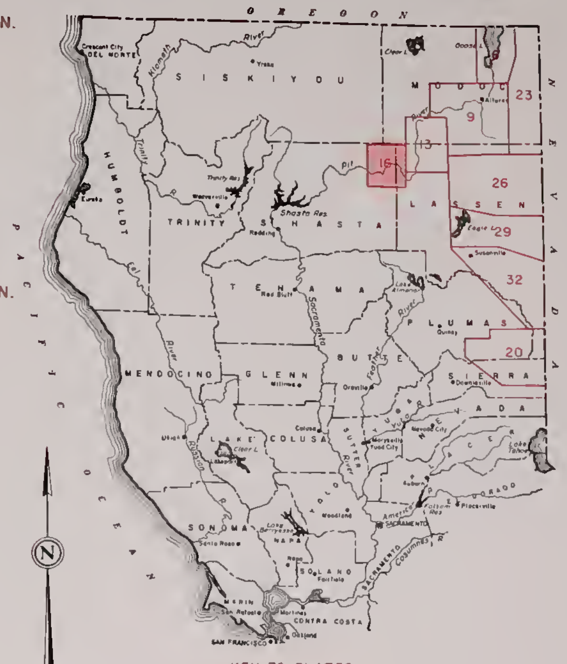
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS FALL RIVER VALLEY GROUND WATER BASIN

SPRING 1960

SCALE OF MILES
1 0 1 2


R.3 E.
R.4 E.
R.5 E.
R.6 E.
SISKIYOU CO.
SHASTA CO.
MODOC CO.
LASSEN CO.
T. 39 N.
T. 38 N.
T. 37 N.
T. 36 N.
T. 35 N.
Timbered Crater
Green Place Resvr.
Big Valley
Bear Spr.
Widow Mtn.
Widow Valley Mtns.
Indian Resvr.
Baldy Resvr.
Sugar Pine Basin
Clark Resvr.
Van Sickle Resvr.
Toll House Resvr.
Big Lake
Dana
Soldier Mtn.
Glenburn
McArthur
Pittville
Fall River Mills
Saddle Mtn.
Dry Lake
Warner Creek Resvr.
L. Britton
Pit Falls
Sam Wolfe Spr.
Baum L.
North Brush Mtn.
Rock Springs
Rising River L.
Bald Mtn.
Cable Mtn.
Bobs Spr.
FALL RIVER
PIT RIVER
Beaver
Shasta Lassen
Tule
UNEVALUATED
A
B
C
D
299
89
54
19


OREGON
NEVADA
PACIFIC OCEAN
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
BUTTE
GLENN
MENDOCINO
SIERRA
LAKE
COLUSA
SUTTER
YUBA
NEVADA
PLACER
YOLO
SONOMA
NAPA
SOLANO
MARIN
CONTRA COSTA
SACRAMENTO
EL DORADO
DEL NORTE
Crescent City
Eureka
Redding
Red Bluff
Shasta Res.
Clear L.
San Francisco
Oakland
Sacramento
23
9
16
13
26
29
32
20

KEY TO PLATES

LEGEND

A BEST AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.

B GOOD AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.

C FAIR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock-watering purposes, but generally will be substantially less than "A" or "B" Zone areas.

D POOR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock-watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.

VALLEY FLOOR AREA BOUNDARY.

ROAD SYMBOLS

395	U S HIGHWAY
89	STATE SIGN ROUTE
28	STATE HIGHWAY ROUTE
156	COUNTY ROAD

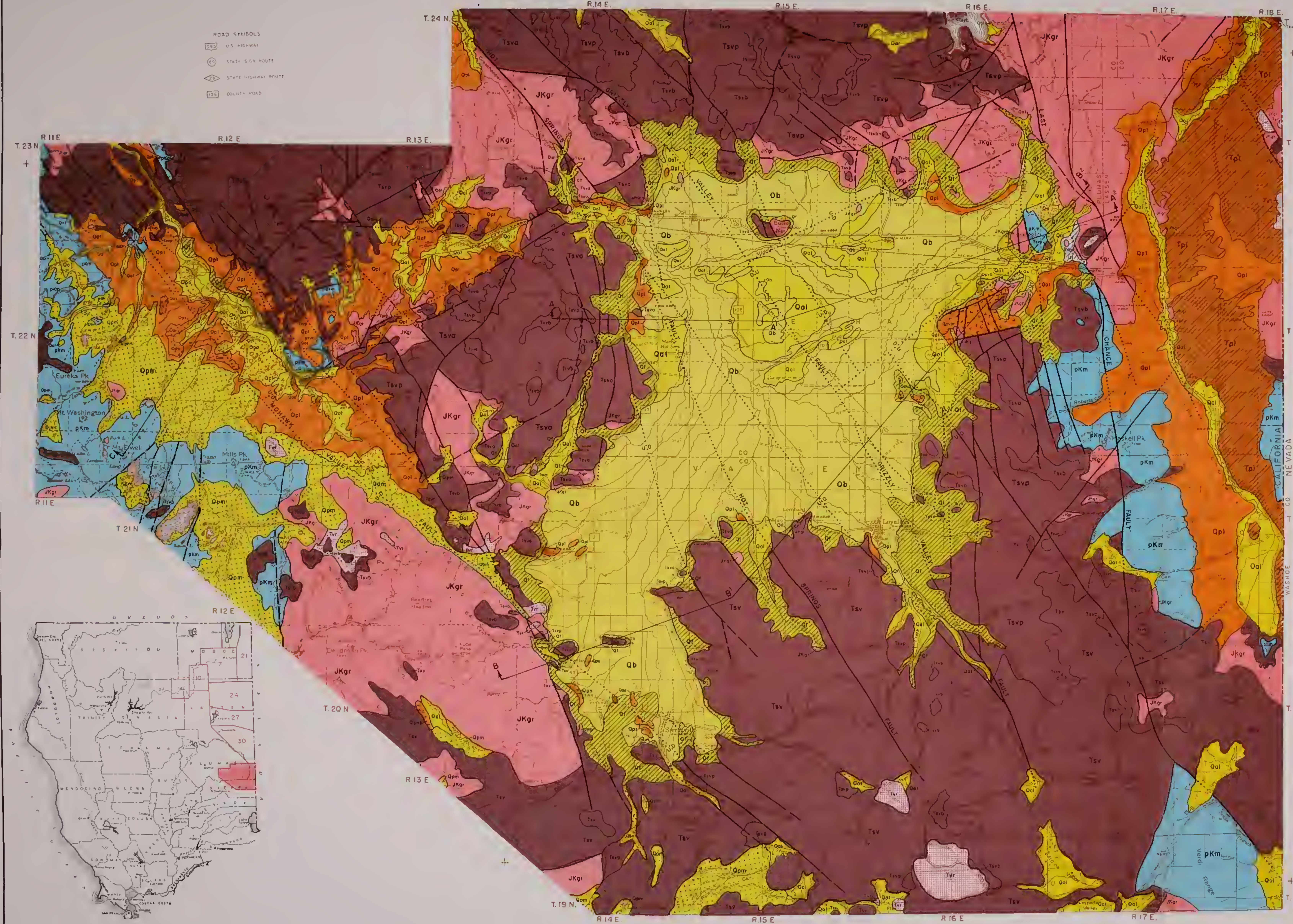
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

POTENTIAL FOR DEVELOPMENT OF GROUND WATER FALL RIVER VALLEY GROUND WATER BASIN

1962

SCALE OF MILES
1 0 1 2


ROAD SYMBOLS
US HIGHWAY
STATE SIGN ROUTE
STATE HIGHWAY ROUTE
COUNTY ROAD
R.14 E.
R.15 E.
R.16 E.
R.17 E.
R.18 E.
R.11 E
R.12 E
R.13 E.
T. 24 N.
T. 23 N.
T. 22 N.
T. 21 N.
T. 20 N.
T. 19 N.
CALIFORNIA
NEVADA
WASHOE CO
MOHAWK VALLEY FAULT
HOT SPRINGS FAULT
GRIZZLY VALLEY FAULT
LAST CHANCE FAULT
SIERRA VALLEY
Eureka Pk.
Mt. Washington
Mt. Ewell
Mills Pk.
Loyalton
Verdi Range
Ob
Qal
Qpm
Opl
Tsv
Tsvp
Tsva
Tsvb
JKgr
pKm
Tpl
Tvr
A
B

GEOLOGIC UNITS

SEDIMENTARY ROCKS

			Symbol	Unit
CENOZOIC	QUATERNARY	Recent	Qsd	SAND DUNES
			Qs	SAND AND SILT DEPOSITS
			Ql	RECENT LAKE DEPOSITS
			Qls	LANDSLIDES
			Qta	TALUS
			Qmp	MUCK AND PEAT DEPOSITS
			Qb	BASIN DEPOSITS
			Qal	INTERMEDIATE ALLUVIAL DEPOSITS
			Qf	ALLUVIAL FANS
		Pleistocene	Qt	TERRACES
			Qps	NEAR-SHORE DEPOSITS
			Qpl	PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
			Qpo	GLACIAL OUTWASH
			Qpm	MORAINES
			TQa	ALTURAS FORMATION
			TQb	BIEBER FORMATION
	TERTIARY	Pliocene	Tpl	PLIOCENE LAKE DEPOSITS
		Miocene	Tmfc	FORTY-NINE CAMP FORMATION
		Oligocene	Tdc	DEEP CREEK CONGLOMERATE
		Eocene	Teg	AURIFEROUS GRAVELS
		Undivided	Tgr	GOLD RUN SANDSTONE
			Tfs	FORT SAGE SANDSTONE

VOLCANIC ROCKS

			Symbol	Unit
CENOZOIC	QUATERNARY	Recent	Qrb	RECENT BASALT
		Pleistocene		PLEISTOCENE AND RECENT CINDER CONES
			Qpb	PLEISTOCENE BASALT
			Qpp	PLEISTOCENE PYROCLASTIC ROCKS
			TQpb	PLIO-PLEISTOCENE BASALT
			TQpp	PLIO-PLEISTOCENE PYROCLASTIC ROCKS
			TQst	WARM SPRINGS TUFF
	TERTIARY	Pliocene	Tpb	PLIOCENE BASALT
			Tpa	PLIOCENE ANDESITE
			Tpp	PLIOCENE PYROCLASTIC ROCKS
		Miocene	Tmv	MIOCENE VOLCANIC ROCKS, UNDIVIDED
			Tmvb	MIOCENE BASALT
			Tmva	MIOCENE ANDESITE
			Tmvp	MIOCENE PYROCLASTIC ROCKS
			Tmtc	TURNER CREEK FORMATION
			Tmc	CEDARVILLE SERIES
		Undivided	Tvr	RHYOLITE
			Tvb	BIG VALLEY MOUNTAIN VOLCANIC SERIES
			Tsv	SIERRAN VOLCANIC ROCKS, UNDIVIDED
			Tsvb	SIERRAN BASALT
			Tsva	SIERRAN ANDESITE
			Tsvp	SIERRAN PYROCLASTIC ROCKS

BASEMENT COMPLEX

	Symbol	Unit
MESOZOIC	JKgr	GRANITIC ROCKS
PALEOZOIC	pKm	METAMORPHIC ROCKS

NOTE
COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET. FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES, REFER TO STRATIGRAPHIC COLUMN (TABLE 13)

SYMBOLS

- GEOLOGIC CONTACT
- FAULT, DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
- CONCEALED FAULT
- LOCATION OF GEOLOGIC SECTION

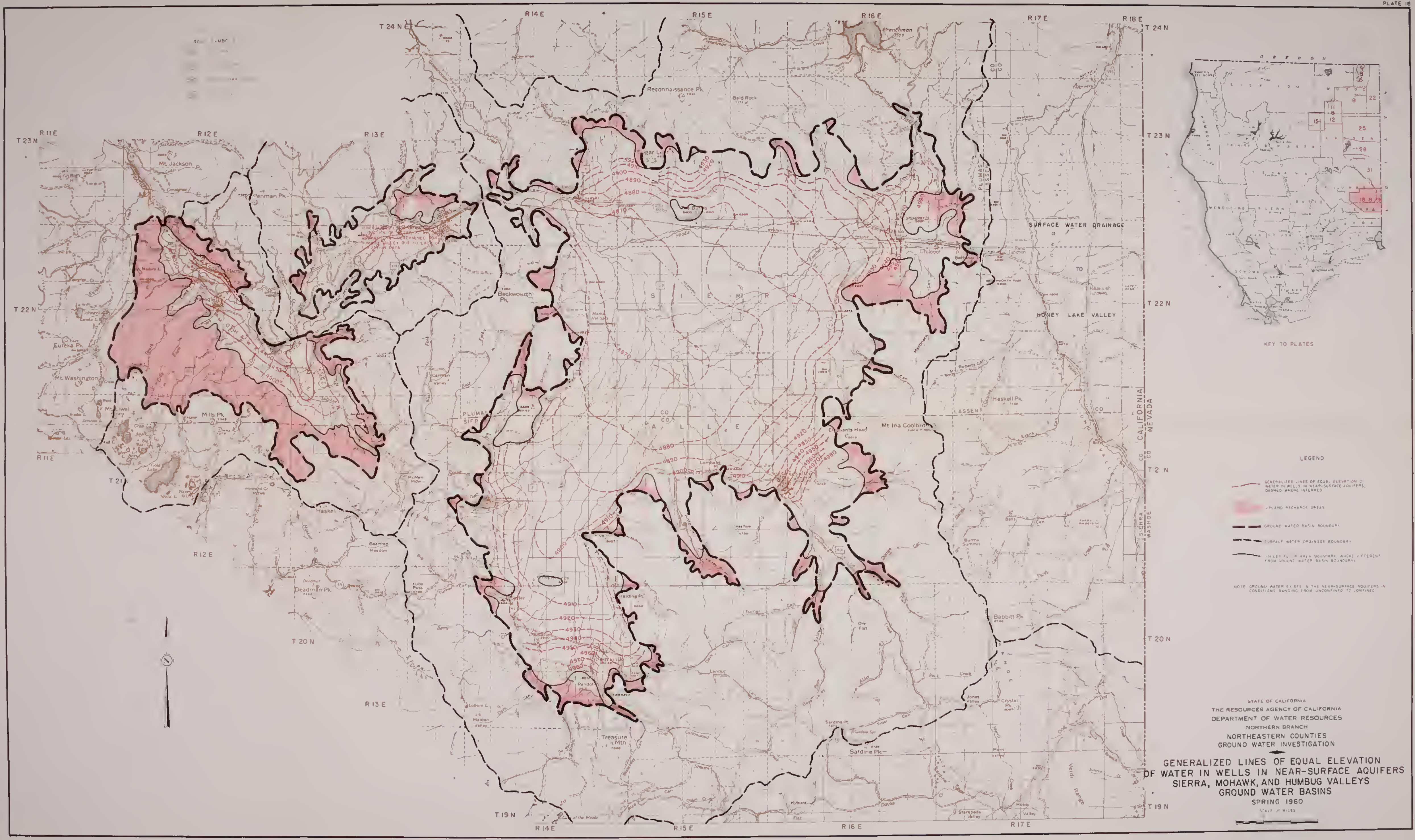
GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
SIERRA, MOHAWK, AND HUMBUG VALLEYS GROUND WATER BASINS
1962

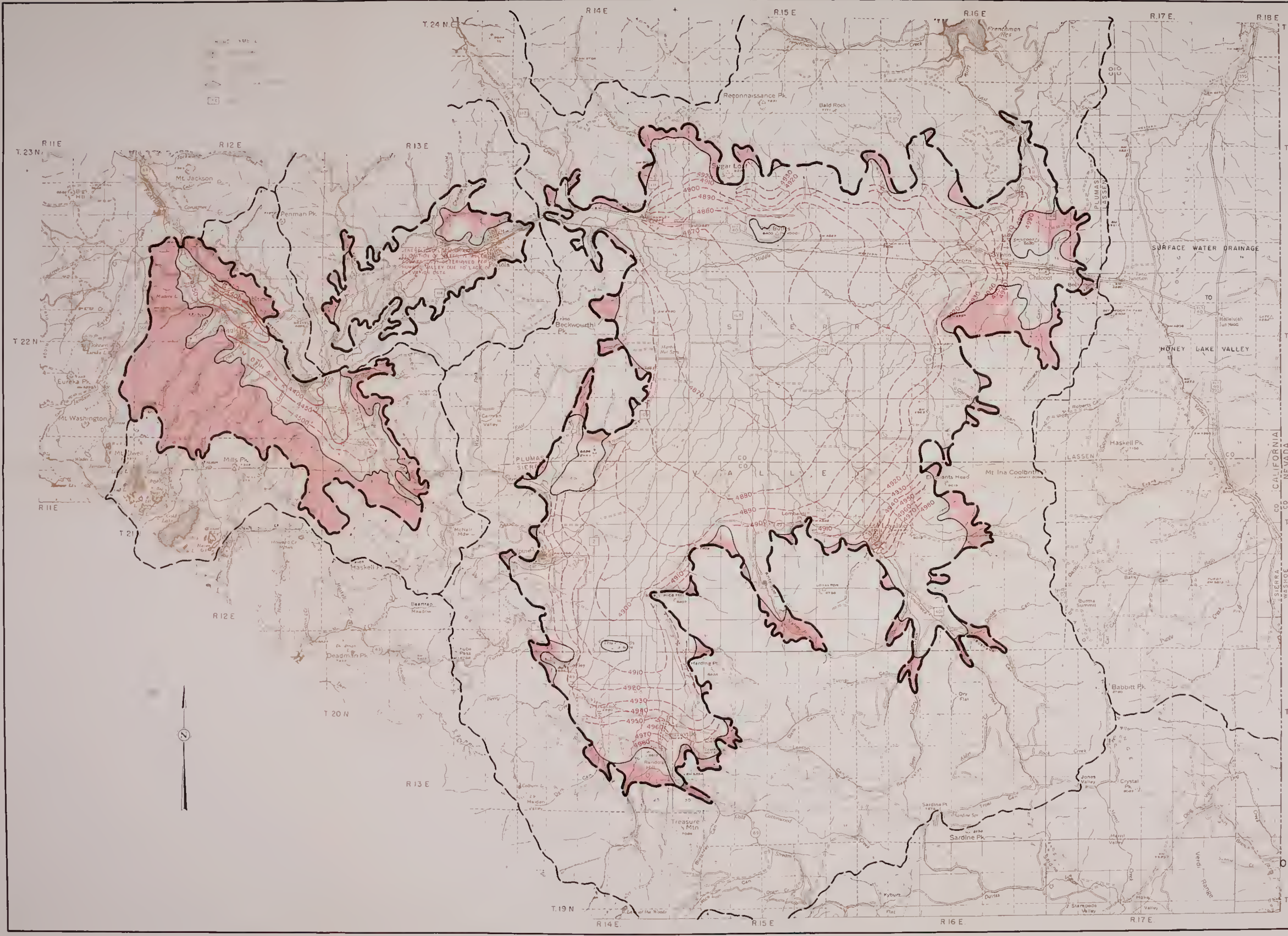
SCALE OF MILES
2

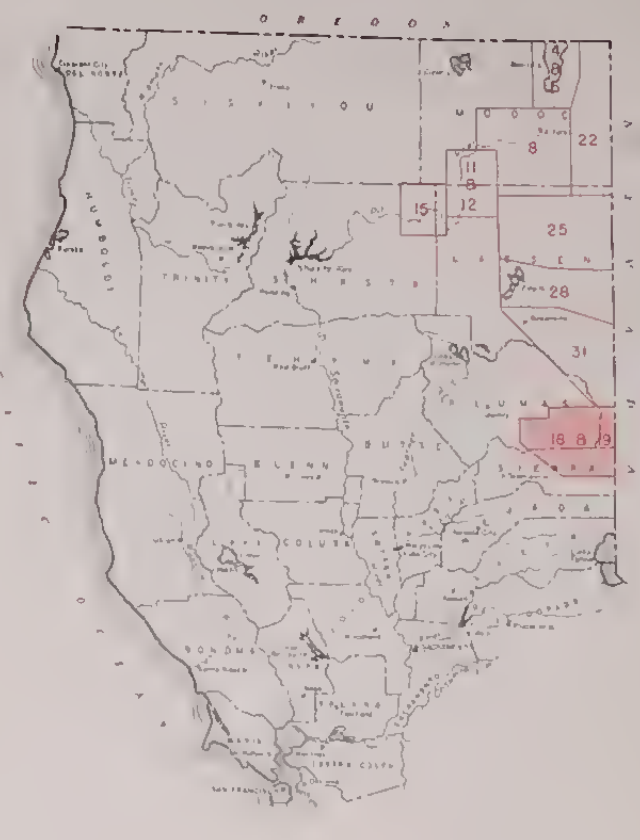

R 14 E
R 15 E
R 16 E
R 17 E
R 18 E
R 11 E
R 12 E
R 13 E
T 24 N
T 23 N
T 22 N
T 21 N
T 20 N
T 19 N
Frenchman Res
Reconnaissance Pk
Bald Rock
Mt. Jackson
Penman Pk
Beckwourth Pk
Eureka Pk
Mt. Washington
Mt. Elwell
Mills Pk
Haskell Pk
Mt Ina Coolbrith
Babbitt Pk
Treasure Mtn
Sardine Pk
Crystal Pk
Deadman Pk
Chilcoot
Loyalton
Sierraville
Randolph
SURFACE WATER DRAINAGE TO HONEY LAKE VALLEY
S I E R R A V A L L E Y
PLUMAS CO
SIERRA CO
LASSEN CO
CALIFORNIA
NEVADA
SIERRA
WASHOE
4870
4880
4890
4900
4910
4920
4930
4940
4950
4960
4970
4980
4500
KEY TO PLATES
LEGEND
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS, DASHED WHERE INFERRED
UPLAND RECHARGE AREAS
GROUND WATER BASIN BOUNDARY
SURFACE WATER DRAINAGE BOUNDARY
VALLEY FLOOR AREA BOUNDARY WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY
NOTE: GROUND WATER EXISTS IN THE NEAR-SURFACE AQUIFERS IN CONDITIONS RANGING FROM UNCONFINED TO CONFINED
SCALE IN MILES

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS SIERRA, MOHAWK, AND HUMBUG VALLEYS GROUND WATER BASINS

SPRING 1960


R.11 E
R.12 E
R.13 E
R.14 E
R.15 E
R.16 E
R.17 E.
R.18 E
T. 24 N.
T. 23 N.
T. 22 N.
T. 21 N.
T. 20 N
T. 19 N
Frenchman Res.
Reconnaissance Pk.
Bald Rock
Mt. Jackson
Penman Pk.
Sugar Loaf
Beckwourth Pk.
Chilcoot
Beckwourth
SURFACE WATER DRAINAGE TO HONEY LAKE VALLEY
Eureka Pk.
Mt. Washington
Mills Pk.
Haskell Pk.
Beartrap Meadow
Deadman Pk.
McNair Mdw.
Calpine
PLUMAS CO
SIERRA CO
S I E R R A
V A L L E Y
Elephants Head
Mt Ina Coolbrith
Loyalton
Lombard
Harding Pk.
Hot Springs
Sattley
Sierraville
Randolph
Turner
Dry Flat
Treasure Mtn
Sardine Pt.
Sardine Pk.
Babbitt Pk.
Haskell Pk.
Crystal Pk.
Jones Valley
Stampede Valley
Kyburz Flat
LASSEN CO
CO PLUMAS LASSEN CO
CALIFORNIA NEVADA
SIERRA WASHOE
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS NOT DETERMINED FOR MOHAWK VALLEY DUE TO LACK OF ELEVATION DATA
4400
4450
4500
4800
4860
4870
4880
4890
4900
4910
4920
4930
4940
4950
4960
4970
4980
N


OREGON
8
22
11
9
12
15
25
28
31
16
8
9

KEY TO PLATES

LEGEND

- GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS, DASHED WHERE INFERRED
- ▨ UPLAND RECHARGE AREAS
- GROUND WATER BASIN BOUNDARY
- SURFACE WATER DRAINAGE BOUNDARY
- VALLEY FLOOR AREA BOUNDARY WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY

NOTE: GROUND WATER EXISTS IN THE NEAR-SURFACE AQUIFERS IN CONDITIONS RANGING FROM UNCONFINED TO CONFINED

DAVIS
DEC 2 0 1963
LIBRARY

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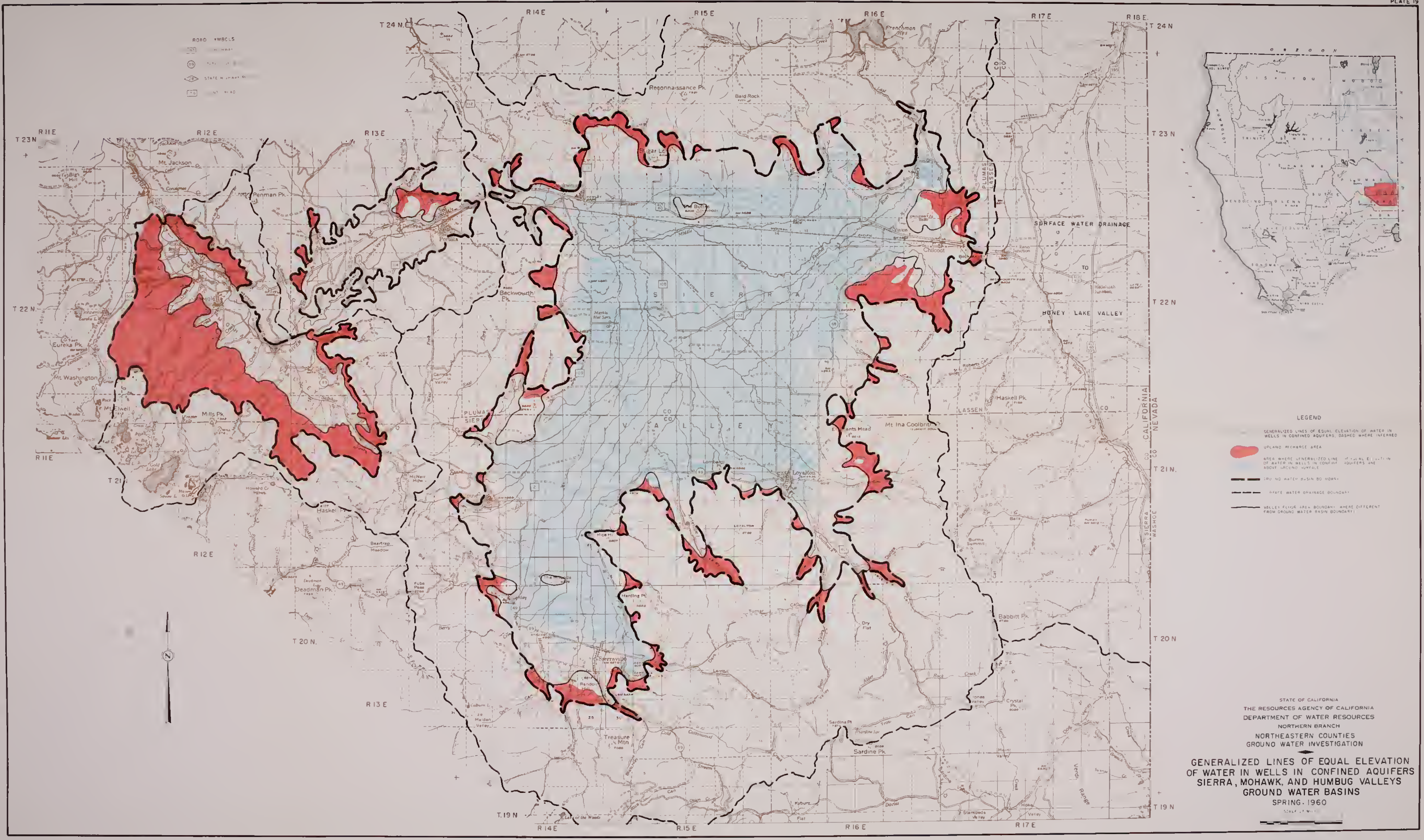
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS SIERRA, MOHAWK, AND HUMBUG VALLEYS GROUND WATER BASINS

SPRING 1960

SCALE OF MILES
1 0 1 2

BULLETIN 98
PLATE 19

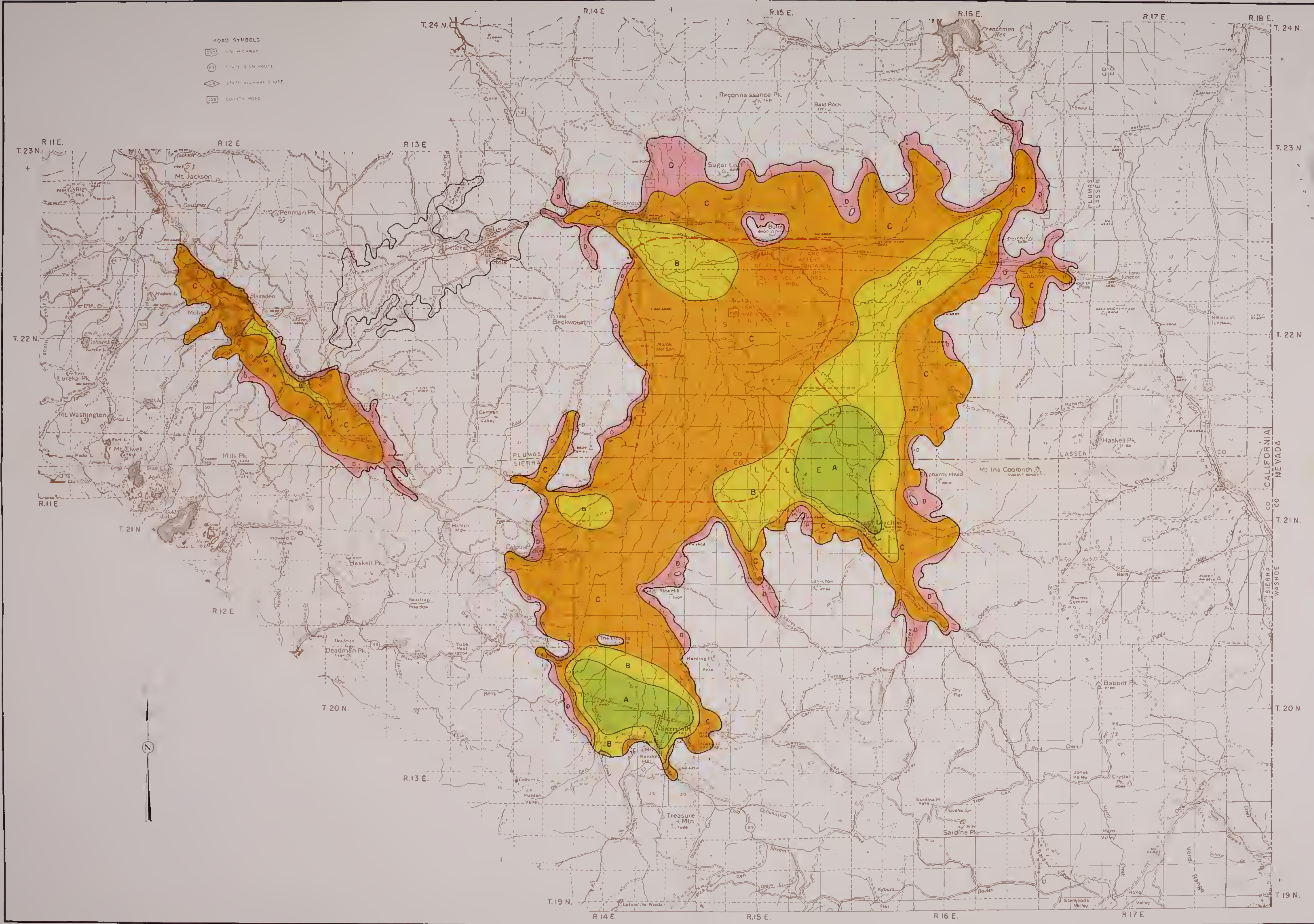

R 11 E
R 12 E
R 13 E
R 14 E
R 15 E
R 16 E
R 17 E
R 18 E
T 24 N
T 23 N
T 22 N
T 21 N
T 20 N
T 19 N
ROAD SYMBOLS
Reconnaissance Pk.
Bald Rock
Frenchman Res.
Sugar L.
The Buttes
Penman Pk.
Mt. Jackson
Portola
Beckwourth Pk.
Chilcoot
SIERRA VALLEY
Loyalton
Mt. Ina Coolbrith
Elephants Head
Lombard Pt.
Hice Hill
Harding Pt.
Sierraville
Randolph
Treasure Mtn.
Sardine Pk.
Babbitt Pk.
Haskell Pk.
Crystal Pk.
Eureka Pk.
Mt. Washington
Mt. Elwell
Mills Pk.
Haskell
Beartrap Meadow
Deadman Pk.
McNair Mdw.
Carman Valley
Dry Flat
SURFACE WATER DRAINAGE TO HONEY LAKE VALLEY
PLUMAS
LASSEN
SIERRA
WASHOE
CALIFORNIA
NEVADA
OREGON
SISKIYOU
MODOC
TRINITY
SHASTA
LASSEN
MENDOCINO
GLENN
BUTTE
PLUMAS
SONOMA
LEGEND
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS, DASHED WHERE INFERRED
UPLAND RECHARGE AREA
AREA WHERE GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS ARE ABOVE GROUND SURFACE
GROUND WATER BASIN BOUNDARY
SURFACE WATER DRAINAGE BOUNDARY
VALLEY FLOOR AREA BOUNDARY WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY
SCALE OF MILES

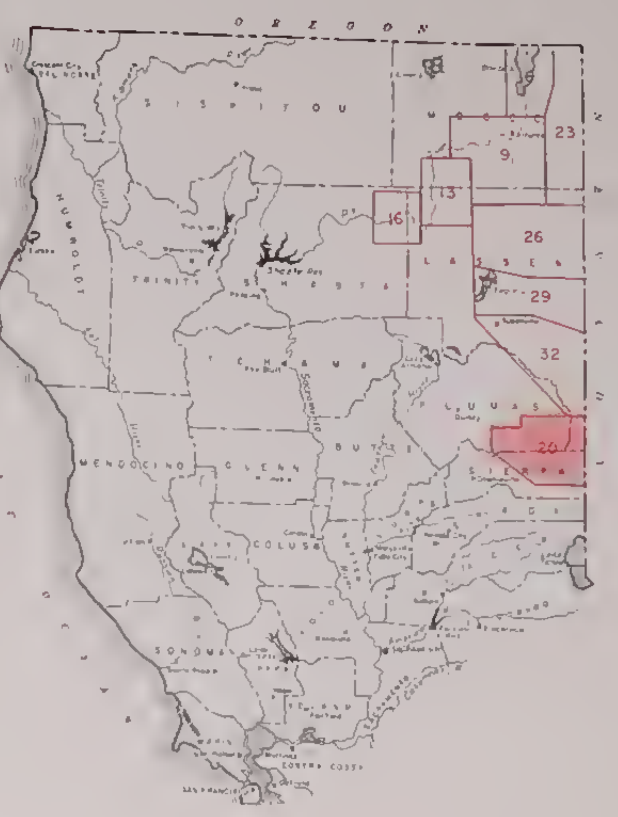
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS SIERRA, MOHAWK, AND HUMBUG VALLEYS GROUND WATER BASINS

SPRING · 1960


ROAD SYMBOLS
U.S. HIGHWAY
STATE SIGN ROUTE
STATE HIGHWAY ROUTE
COUNTY ROAD
R.11 E.
R.12 E.
R.13 E.
R.14 E.
R.15 E.
R.16 E.
R.17 E.
R.18 E.
T.24 N.
T.23 N.
T.22 N.
T.21 N.
T.20 N.
T.19 N.
Frenchman Res.
Reconnaissance Pk.
Baldy Rock
Sugar Loaf
Beckwourth
Beckwourth Pk.
Portola
Mt. Jackson
Penman Pk.
Blairsden
Mohawk
Johnsville
Eureka Pk.
Mt. Washington
Mt. Elwell
Mills Pk.
McNair Mdw.
Calpine
Haskell Pk.
Beartrap Meadow
Deadman Pk.
Yuba Pass
Rica Hill
Harding Pk.
Sierraville
Randolph Hill
Treasure Mtn.
Loyalton
Elephants Head
Mt. Ina Coolbrith
Haskell Pk.
Babbitt Pk.
Chilcoot
Reno Junction
Dry Flat
Jones Valley
Crystal Pk.
Sardine Pk.
Stampede Valley
Hoke Valley
Verdi Range
PLUMAS
SIERRA
LASSEN
CALIFORNIA
NEVADA
WASHOE
CO.
S I E R R A   V A L L E Y
M O H A W K   V A L L E Y
A
B
C
D
N


O R E G O N
S I S K I Y O U
T R I N I T Y
S H A S T A
L A S S E N
T E H A M A
M E N D O C I N O
G L E N N
B U T T E
C O L U S A
S O N O M A
23
9
13
16
26
29
32
20

KEY TO PLATES

LEGEND

A	BEST AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.
B	GOOD AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.
C	FAIR AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock watering purposes, but generally will be substantially less than "A" or "B" Zone areas.
D	POOR AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.
⬭	WATER QUALITY HAZARD AREA
—	VALLEY FLOOR AREA BOUNDARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

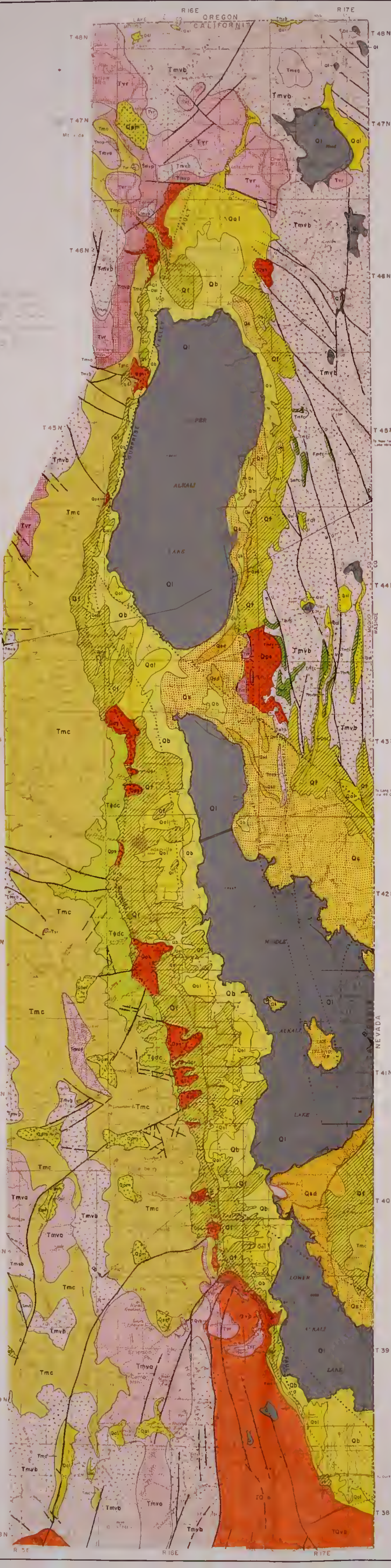
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

POTENTIAL FOR DEVELOPMENT OF GROUND WATER SIERRA, MOHAWK, AND HUMBUG VALLEYS GROUND WATER BASINS

1962

SCALE OF MILES
1 0 1 2


OREGON
CALIFORNIA
NEVADA
MODOC
WASHOE
R16E
R17E
T 48 N
T 47 N
T 46 N
T 45 N
T 44 N
T 43 N
T 42 N
T 41 N
T 40 N
T 39 N
T 38 N
UPPER
ALKALI
LAKE
MIDDLE
ALKALI
LAKE
LOWER
ALKALI
LAKE
SURPRISE VALLEY
FAULT
Ql
Qb
Qal
Qf
Qs
Qsd
Tmc
Tmvb
Tmva
Tvr
Tdc
Qpn

OREGON
21
24
27
30
14
10
7

KEY TO PLATES

GEOLOGIC UNITS

SEDIMENTARY ROCKS

- CENOZOIC
  - QUATERNARY
    - Recent
      - SAND DUNES
      - SAND AND SILT DEPOSITS
      - RECENT LAKE DEPOSITS
      - LANDSLIDES
      - TALUS
      - MUCK AND PEAT DEPOSITS
      - BASIN DEPOSITS
      - INTERMEDIATE ALLUVIAL DEPOSITS
      - ALLUVIAL FANS
      - TERRACES
    - Pleistocene
      - NEAR-SHORE DEPOSITS
      - PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
      - GLACIAL OUTWASH
      - MORAINES
      - ALTURAS FORMATION
      - BIEBER FORMATION
  - TERTIARY
    - PLIOCENE LAKE DEPOSITS
    - FORTY NINE CAMP FORMATION
    - DEEP CREEK CONGLOMERATE
    - AURIFEROUS GRAVELS
    - Undivided
      - GOLD RUN SANDSTONE
      - FORT SAGE SANDSTONE

VOLCANIC ROCKS

- CENOZOIC
  - QUATERNARY
    - Recent
      - RECENT BASALT
    - Pleistocene
      - PLEISTOCENE AND RECENT CINDER CONES
      - PLEISTOCENE BASALT
      - PLEISTOCENE PYROCLASTIC ROCKS
      - PLIO-PLEISTOCENE BASALT
      - PLIO-PLEISTOCENE PYROCLASTIC ROCKS
        - WARM SPRINGS TUFF
  - TERTIARY
    - Pliocene
      - PLIOCENE BASALT
      - PLIOCENE ANDESITE
      - PLIOCENE PYROCLASTIC ROCKS
    - Miocene
      - MIOCENE VOLCANIC ROCKS, UNDIVIDED
        - MIOCENE BASALT
        - MIOCENE ANDESITE
        - MIOCENE PYROCLASTIC ROCKS
      - TURNER CREEK FORMATION
      - CEDARVILLE SERIES
    - Undivided
      - RHYOLITE
      - BIG VALLEY MOUNTAIN VOLCANIC SERIES
      - SIERRAN VOLCANIC ROCKS, UNDIVIDED
        - SIERRAN BASALT
        - SIERRAN ANDESITE
        - SIERRAN PYROCLASTIC ROCKS

BASEMENT COMPLEX

- MESOZOIC
  - GRANITIC ROCKS
- PALEOZOIC
  - METAMORPHIC ROCKS

NOTE
COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET. FOR DESCRIPTION OF PHYSICAL AND WATER BEARING PROPERTIES REFER TO STRATIGRAPHIC COLUMN (TABLE [illegible])

SYMBOLS

- GEOLOGIC CONTACT
- FAULT, DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
- CONCEALED FAULT
- LOCATION OF GEOLOGIC SECTION

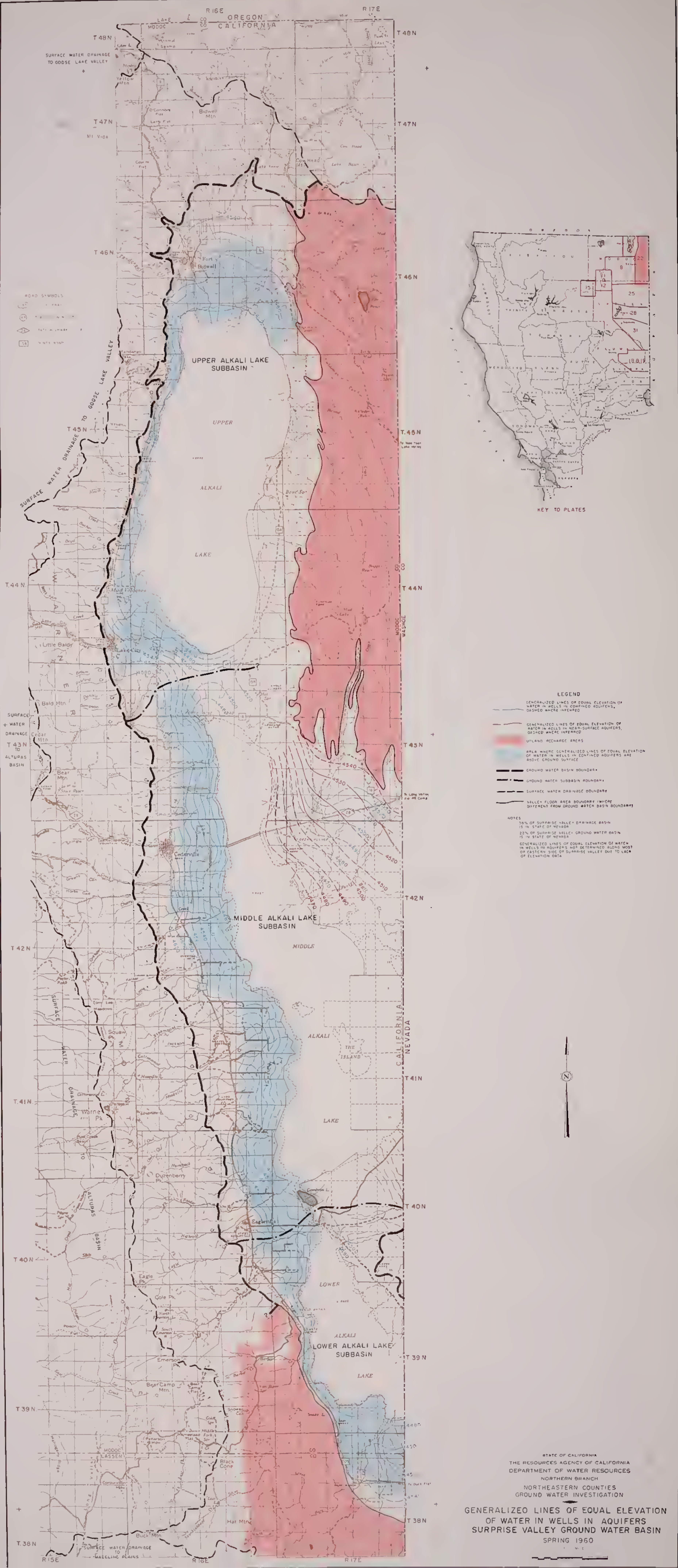
GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
SURPRISE VALLEY GROUND WATER BASIN

1962


R16E
R17E
OREGON
CALIFORNIA
MODOC
LAKE
T48N
T47N
T46N
T45N
T44N
T43N
T42N
T41N
T40N
T39N
T38N
SURFACE WATER DRAINAGE TO GOOSE LAKE VALLEY
Bidwell Mtn
Fort Bidwell
UPPER ALKALI LAKE SUBBASIN
UPPER
ALKALI
LAKE
MIDDLE ALKALI LAKE SUBBASIN
MIDDLE
ALKALI
THE ISLAND
LAKE
LOWER
ALKALI
LOWER ALKALI LAKE SUBBASIN
LAKE
Lake City
Cedarville
Eagleville
Little Baldy
Bald Mtn
Bear Mtn
Cedar Mtn
Squaw Pk
Warner Pk
Duzenberry Pk
Eagle Pk
Cole Pk
Emerson
Bear Camp Mtn
Black Cone
Hat Mtn
Buck Mtn
W A R N E R
SURFACE + WATER DRAINAGE TO ALTURAS BASIN
SURFACE WATER DRAINAGE TO ALTURAS BASIN
SURFACE WATER DRAINAGE TO MADELINE PLAINS
MODOC
LASSEN
WASHOE
CALIFORNIA
NEVADA
4540
4530
4520
4510
4500
4490
4480
4470
R15E
R16E
R17E
ROAD SYMBOLS
KEY TO PLATES
22
8
25
28
31
12
13
15
18, 19

LEGEND

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS, DASHED WHERE INFERRED

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN NEAR-SURFACE AQUIFERS, DASHED WHERE INFERRED

🟥 UPLAND RECHARGE AREAS

🟦 AREA WHERE GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS ARE ABOVE GROUND SURFACE

GROUND WATER BASIN BOUNDARY

GROUND WATER SUBBASIN BOUNDARY

SURFACE WATER DRAINAGE BOUNDARY

VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

NOTES

38% OF SURPRISE VALLEY DRAINAGE BASIN IS IN STATE OF NEVADA

22% OF SURPRISE VALLEY GROUND WATER BASIN IS IN STATE OF NEVADA

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS NOT DETERMINED ALONG MOST OF EASTERN SIDE OF SURPRISE VALLEY DUE TO LACK OF ELEVATION DATA

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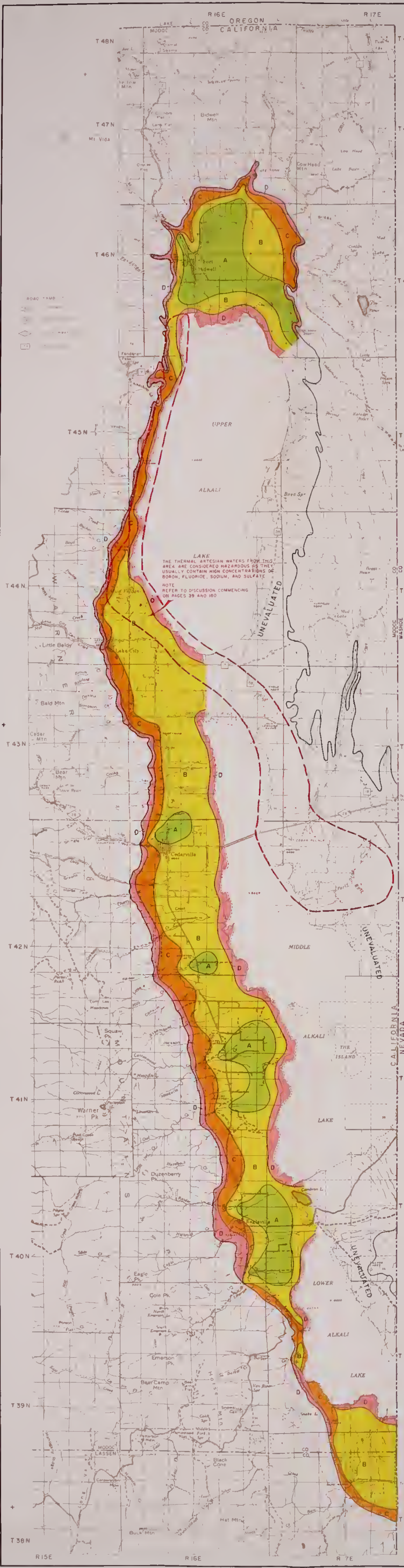
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS SURPRISE VALLEY GROUND WATER BASIN

SPRING 1960


R16E
OREGON
CALIFORNIA
LAKE
MODOC
CO
CO
R17E
T48N
T47N
T46N
T45N
T44N
T43N
T42N
T41N
T40N
T39N
T38N
R15E
R16E
R17E
Bidwell Mtn
Mt Vida
Cow Head Mtn
Fort Bidwell
UPPER
ALKALI
LAKE
Boyd Sp
UNEVALUATED
MODOC
WASHOE
CO
CO
Lake City
Little Baldy
Bald Mtn
Cedar Mtn
Bear Mtn
Cedarville
MIDDLE
ALKALI
THE ISLAND
LAKE
CALIFORNIA
NEVADA
Squaw Pk
Warner Pk
Duzenberry Pk
Eagleville
Eagle Pk
Cole Pk
Emerson Pk
Bear Camp Mtn
LOWER
ALKALI
LAKE
MODOC
LASSEN
Black Cone
Hat Mtn
Buck Mtn
A
B
C
D

THE THERMAL ARTESIAN WATERS FROM THIS AREA ARE CONSIDERED HAZARDOUS AS THEY USUALLY CONTAIN HIGH CONCENTRATIONS OF BORON, FLUORIDE, SODIUM, AND SULFATE

NOTE
REFER TO DISCUSSION COMMENCING ON PAGES 39 AND 180

23
9
15
16
26
29
32
20

KEY TO PLATES

LEGEND

🟩 A	BEST AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.
🟨 B	GOOD AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.
🟧 C	FAIR AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock watering purposes, but generally will be substantially less than "A" or "B" Zone areas.
🟥 D	POOR AREAS FOR DEVELOPMENT OF GROUND WATER Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock-watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.
⬭	WATER QUALITY HAZARD AREA
—	VALLEY FLOOR AREA BOUNDARY

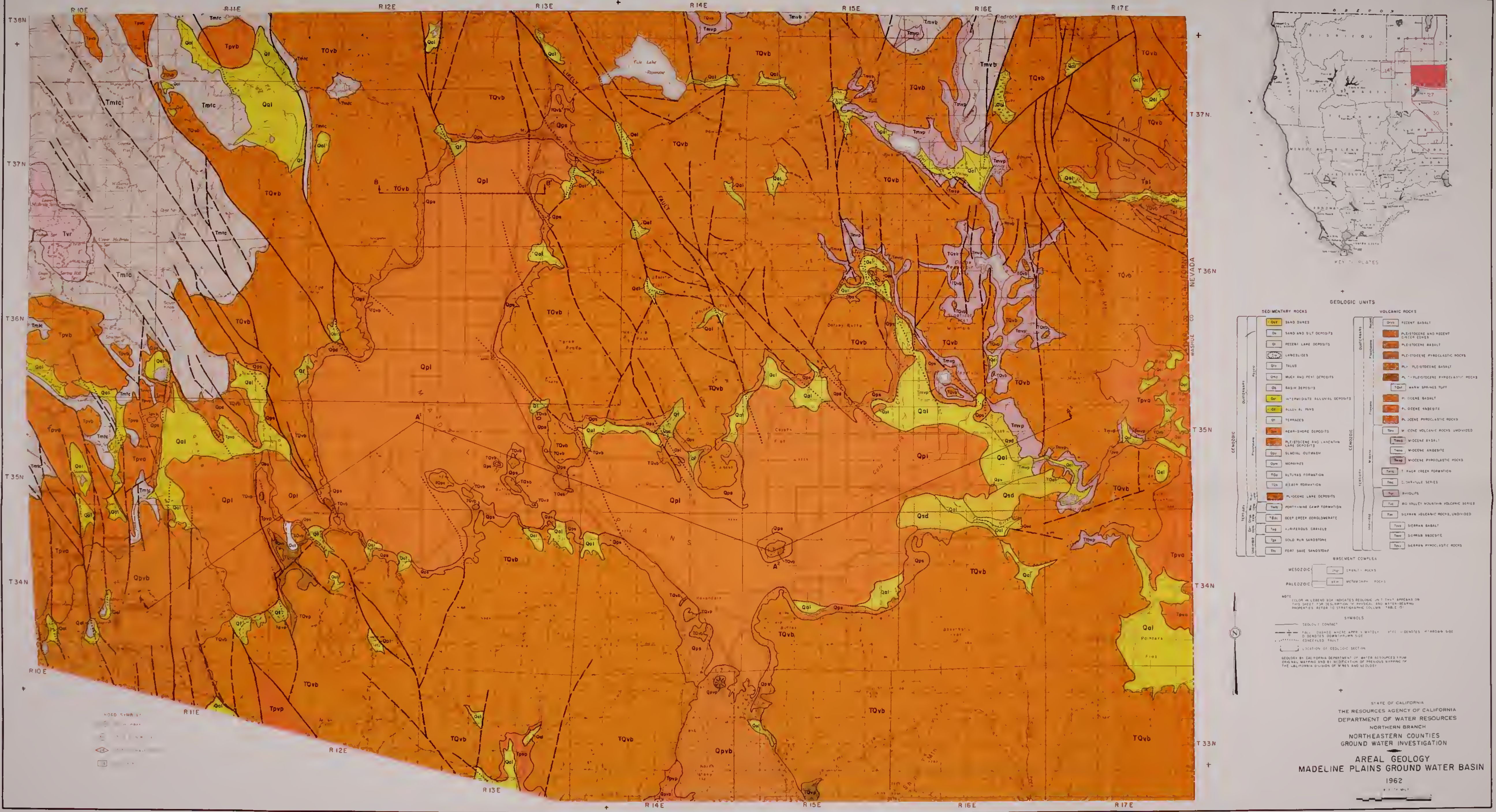
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

POTENTIAL FOR DEVELOPMENT OF GROUND WATER SURPRISE VALLEY GROUND WATER BASIN

1962

BULLETIN 98
PLATE 24


R 10 E
R 11 E
R 12 E
R 13 E
R 14 E
R 15 E
R 16 E
R 17 E
T 38 N
T 37 N
T 36 N
T 35 N
T 34 N
T 33 N
Tule Lake Reservoir
LIKELY FAULT
MADELINE PLAINS
NEVADA
WASHOE CO
Qal
Qpl
Qps
Qf
Qsd
TQvb
Tpvb
Tpva
Tmvb
Tmvp
Tmlc
Tmfc
Tvr
Qpvb
TQvp
A
A'
B
B'
KEY TO PLATES
GEOLOGIC UNITS
SEDIMENTARY ROCKS
Qsd SAND DUNES
Qs SAND AND SILT DEPOSITS
Ql RECENT LAKE DEPOSITS
LANDSLIDES
Qtv TALUS
Qmp MUCK AND PEAT DEPOSITS
Qb BASIN DEPOSITS
Qal INTERMEDIATE ALLUVIAL DEPOSITS
Qf ALLUVIAL FANS
Qt TERRACES
Qps NEAR-SHORE DEPOSITS
Qpl PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
Qpo GLACIAL OUTWASH
Qpm MORAINES
TQa ALTURAS FORMATION
TQb BIEBER FORMATION
PLIOCENE LAKE DEPOSITS
Tmfc FORTY-NINE CAMP FORMATION
TEdc DEEP CREEK CONGLOMERATE
Tag AURIFEROUS GRAVELS
Tgs GOLD RUN SANDSTONE
Tfs FORT SAGE SANDSTONE
VOLCANIC ROCKS
Qrvb RECENT BASALT
PLEISTOCENE AND RECENT CINDER CONES
PLEISTOCENE BASALT
PLEISTOCENE PYROCLASTIC ROCKS
PLIO-PLEISTOCENE BASALT
PLIO-PLEISTOCENE PYROCLASTIC ROCKS
TQwt WARM SPRINGS TUFF
PLIOCENE BASALT
PLIOCENE ANDESITE
PLIOCENE PYROCLASTIC ROCKS
Tmv MIOCENE VOLCANIC ROCKS UNDIVIDED
Tmvb MIOCENE BASALT
Tmva MIOCENE ANDESITE
Tmvp MIOCENE PYROCLASTIC ROCKS
Tmtc TURNER CREEK FORMATION
Tmc CEDARVILLE SERIES
Tvr RHYOLITE
Tvb BIG VALLEY MOUNTAIN VOLCANIC SERIES
Tsv SIERRAN VOLCANIC ROCKS, UNDIVIDED
Tsvb SIERRAN BASALT
Tsva SIERRAN ANDESITE
Tsvp SIERRAN PYROCLASTIC ROCKS
CENOZOIC
QUATERNARY
TERTIARY
Recent
Pleistocene
Pliocene
Miocene
Undivided
BASEMENT COMPLEX
MESOZOIC
PALEOZOIC
GRANITIC ROCKS
METAMORPHIC ROCKS
NOTE
COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET. FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES REFER TO STRATIGRAPHIC COLUMN TABLE (5)
SYMBOLS
GEOLOGIC CONTACT
FAULT, DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE D DENOTES DOWNTHROWN SIDE
CONCEALED FAULT
LOCATION OF GEOLOGIC SECTION
GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY
ROAD SYMBOLS
N
SCALE OF MILES

STATE OF CALIFORNIA
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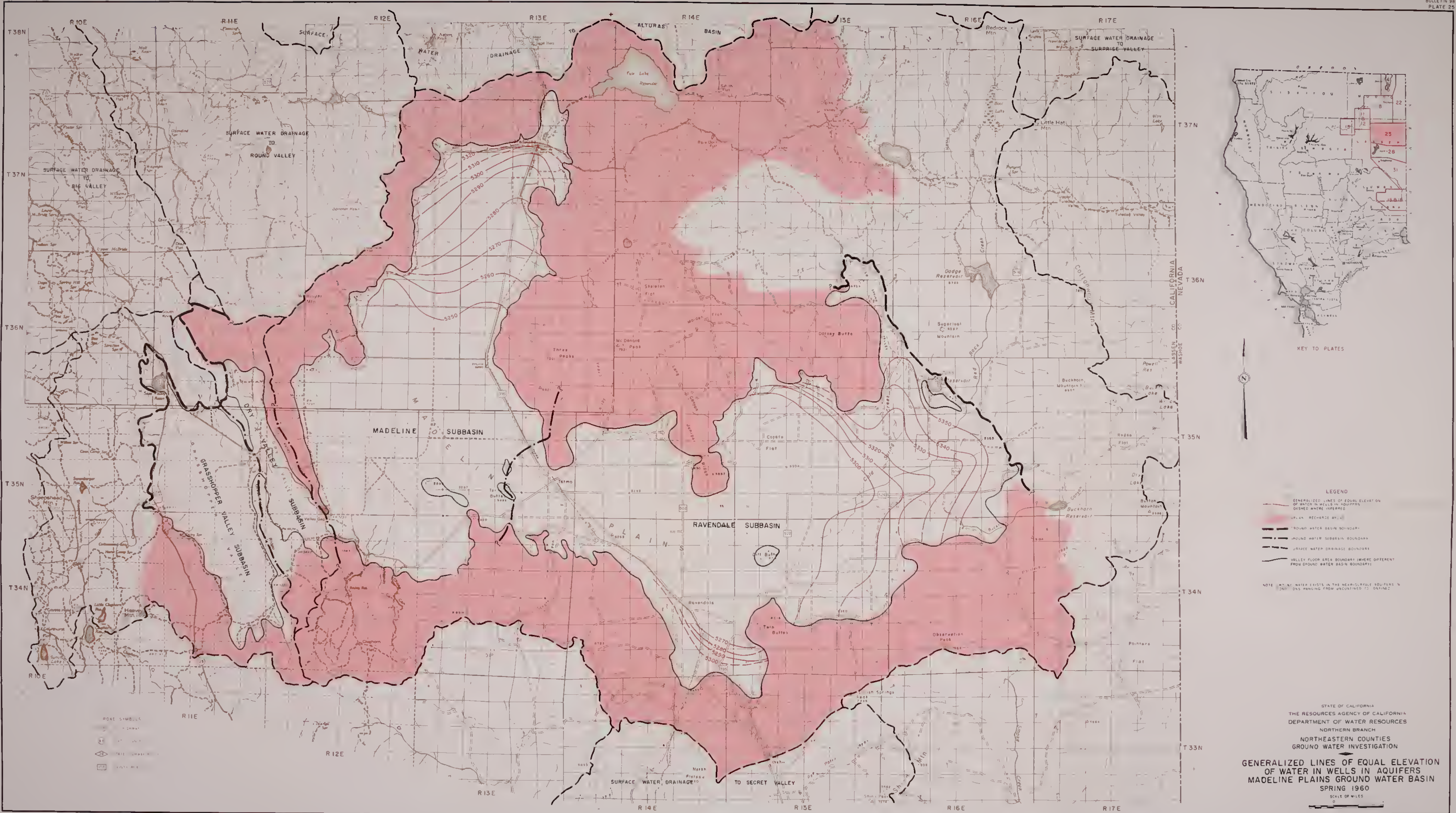
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
MADELINE PLAINS GROUND WATER BASIN

1962


R10E
R11E
R12E
R13E
R14E
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R16E
R17E
T38N
T37N
T36N
T35N
T34N
T33N
SURFACE WATER DRAINAGE TO ALTURAS BASIN
SURFACE WATER DRAINAGE TO ROUND VALLEY
SURFACE WATER DRAINAGE TO BIG VALLEY
SURFACE WATER DRAINAGE TO SURPRISE VALLEY
SURFACE WATER DRAINAGE TO SECRET VALLEY
MADELINE SUBBASIN
RAVENDALE SUBBASIN
GRASSHOPPER VALLEY SUBBASIN
DRY VALLEY SUBBASIN
MADELINE PLAINS
CALIFORNIA
NEVADA
LASSEN CO.
WASHOE CO.
Three Peaks
McDonald Peak
Dorsey Butte
Skedaddle Flat
Coyote Flat
Ravendale
Termo
Twin Buttes
Cal Butte
Observation Peak
Dodge Reservoir
Sugarloaf Mountain
Buckhorn Reservoir
Buckhorn Mountain
Little Hat Mtn
Redrock Mtn
Sheepshead Mtn
Horse Lake
Fitzhugh Lake
Shinn Peak
Pointers Flat
Painted Flat
Redrock Flat
5320
5310
5300
5290
5280
5270
5260
5250
5350
5340
5330
KEY TO PLATES
LEGEND
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS DASHED WHERE INFERRED
MAJOR RECHARGE AREA
GROUND WATER BASIN BOUNDARY
GROUND WATER SUBBASIN BOUNDARY
SURFACE WATER DRAINAGE BOUNDARY
VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)
NOTE: GROUND WATER EXISTS IN THE NEAR-SURFACE AQUIFERS IN CONDITIONS RANGING FROM UNCONFINED TO CONFINED
ROAD SYMBOLS
SCALE OF MILES
0

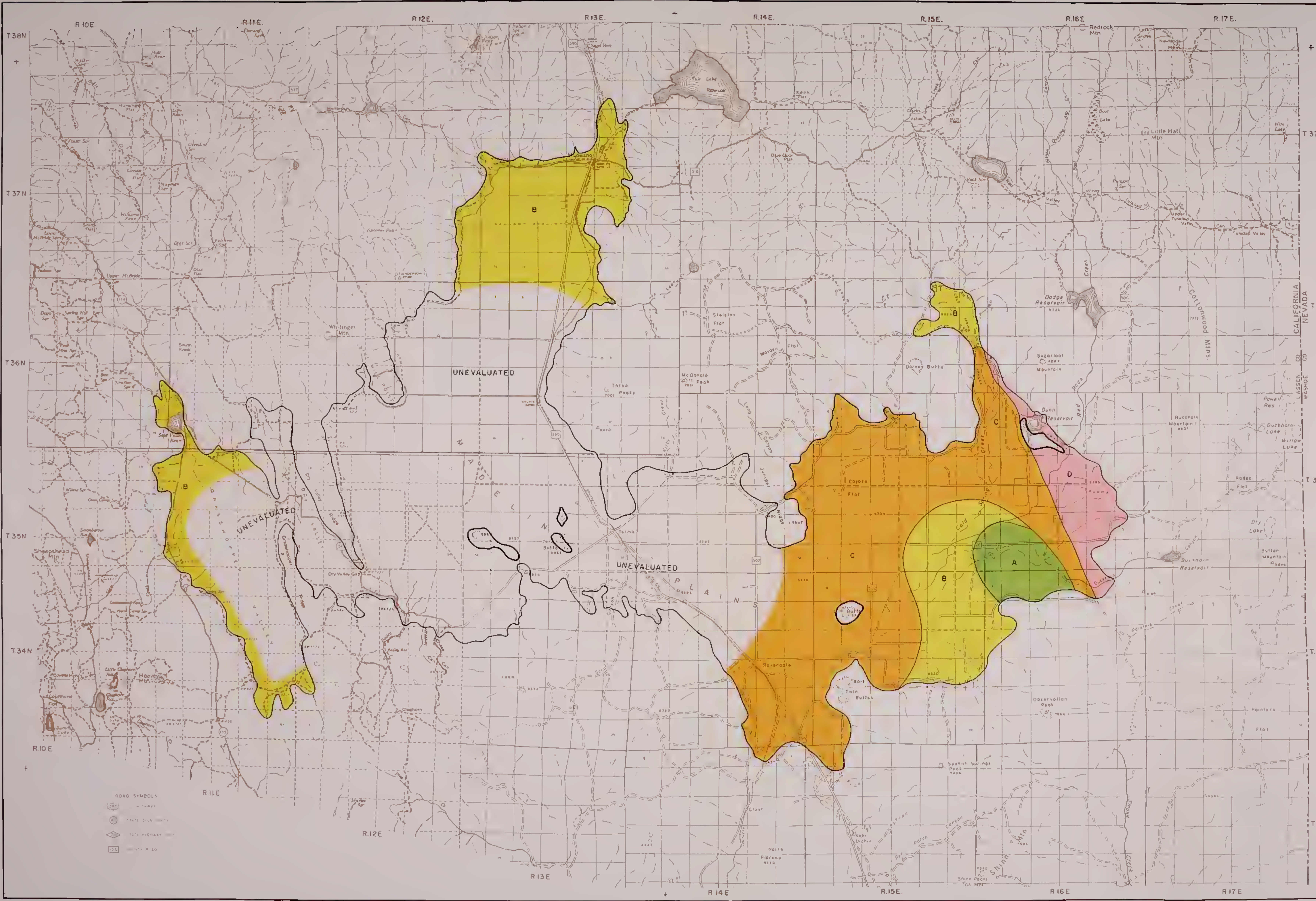
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS MADELINE PLAINS GROUND WATER BASIN

SPRING 1960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T37N
T36N
T35N
T34N
T 37N.
T 36N
T 35N
T 34N
T 33N
UNEVALUATED
UNEVALUATED
UNEVALUATED
A
B
B
B
B
C
C
D
MADELINE PLAINS
CALIFORNIA
NEVADA
LASSEN CO
WASHOE CO
Eagle Lake
Coyote Flat
Cold Spring Creek
Ravendale
Twin Buttes
Termo
Dodge Reservoir
Dunn Reservoir
Sugarloaf Mountain
Dorsey Butte
McDonald Peak
Three Peaks
Whitlinger Mtn.
Sheepshead Mtn.
Redrock Mtn
Little Hat Mtn
Cottonwood Mtns
Buckhorn Mountain
Buckhorn Reservoir
Button Mountain
Observation Peak
Spanish Springs Peak
Shinn Mtn
Shinn Peak
Painters Flat
Rodes Flat
Dry Lake
Powell Res
Buckhorn Lake
Willow Lake
Tuledad Valley
Stateline Flat
Upper McBride
Heavens Mtn
Clapboard
ROAD SYMBOLS

OREGON
PACIFIC OCEAN
23
9
15
18
25
29
32
20

KEY TO PLATES

LEGEND

- A — BEST AREAS FOR DEVELOPMENT OF GROUND WATER
  Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.
- B — GOOD AREAS FOR DEVELOPMENT OF GROUND WATER
  Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.
- C — FAIR AREAS FOR DEVELOPMENT OF GROUND WATER
  Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock watering purposes, but generally will be substantially less than "A" or "B" Zone areas.
- D — POOR AREAS FOR DEVELOPMENT OF GROUND WATER
  Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.
- VALLEY FLOOR AREA BOUNDARY

STATE OF CALIFORNIA
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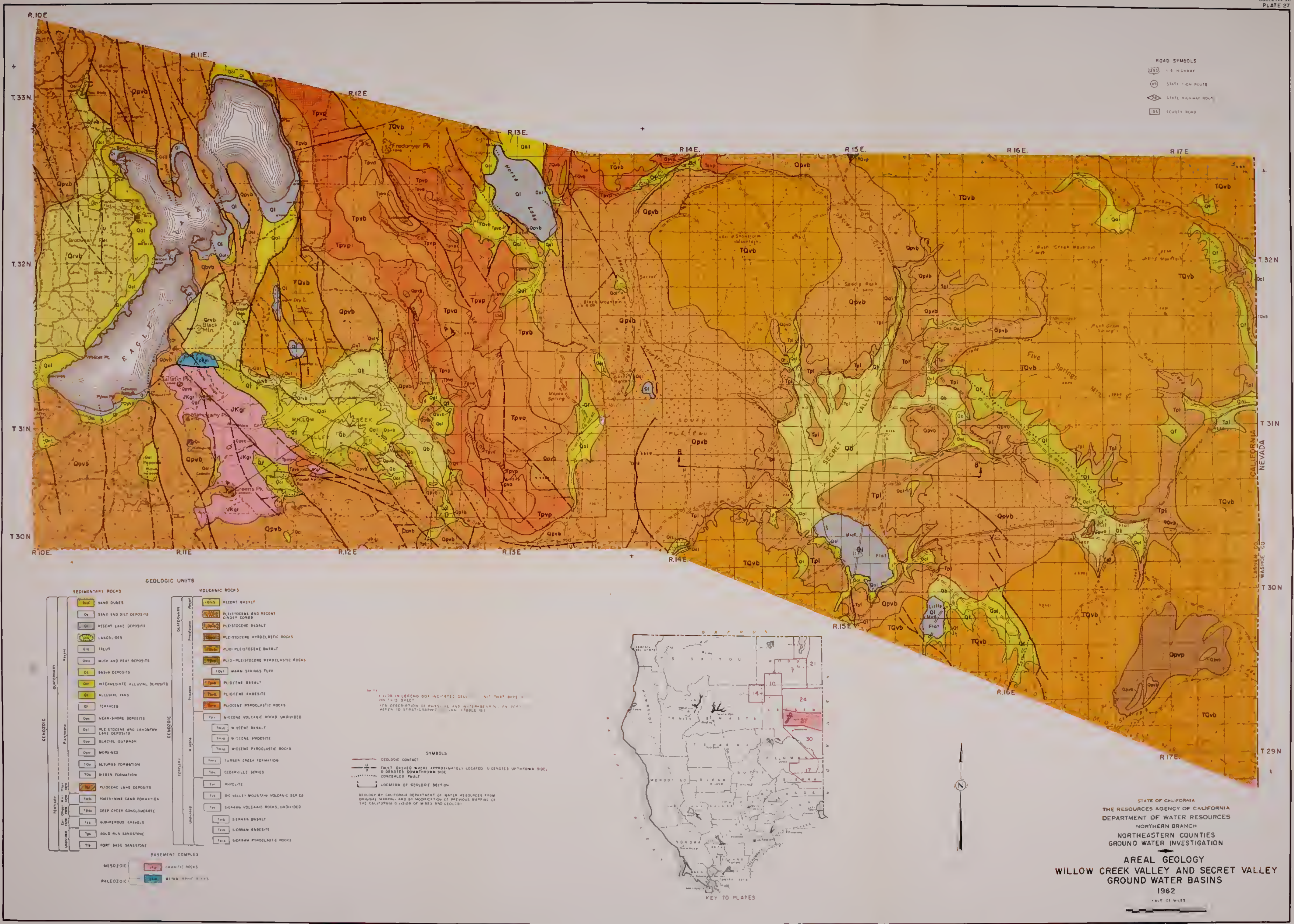
GROUND WATER INVESTIGATION

◆

POTENTIAL FOR DEVELOPMENT OF GROUND WATER MADELINE PLAINS GROUND WATER BASIN

1962

SCALE OF MILES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R.11E.
R.12E.
R.13E.
R.14E.
R.15E.
R.16E.
R.17E.
T.33N.
T.32N.
T.31N.
T.30N.
T.29N.
EAGLE LAKE
Horse Lake
WILLOW CREEK VALLEY
SECRET VALLEY
SOUTH PLATEAU
Black Mtn
Fredonyer Pk.
Gallatin Pk.
Mahogany Pk.
Greens Pk.
Five Springs Mtn
Mud Flat
Little Mud Flat
CALIFORNIA
NEVADA
LASSEN CO.
WASHOE CO.
Qpvb
Qrvb
TQvb
Tpvb
Tpvp
Tpva
Tpl
Ql
Qol
Qb
JKgr
ROAD SYMBOLS
U.S. HIGHWAY
STATE SIGN ROUTE
STATE HIGHWAY ROUTE
COUNTY ROAD
GEOLOGIC UNITS
SEDIMENTARY ROCKS
Qsd SAND DUNES
Qs SAND AND SILT DEPOSITS
Ql RECENT LAKE DEPOSITS
Qls LANDSLIDES
Qta TALUS
Qmu MUCK AND PEAT DEPOSITS
Qb BASIN DEPOSITS
Qal INTERMEDIATE ALLUVIAL DEPOSITS
Qf ALLUVIAL FANS
Qt TERRACES
Qns NEAR-SHORE DEPOSITS
Qpl PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
Qgo GLACIAL OUTWASH
Qm MORAINES
TQa ALTURAS FORMATION
TQb BIEBER FORMATION
Tpl PLIOCENE LAKE DEPOSITS
Tmh FORTY-NINE CAMP FORMATION
TOdc DEEP CREEK CONGLOMERATE
Tag AURIFEROUS GRAVELS
Tgs GOLD RUN SANDSTONE
Tfs FORT SAGE SANDSTONE
VOLCANIC ROCKS
Qrvb RECENT BASALT
PLEISTOCENE AND RECENT CINDER CONES
Qpvb PLEISTOCENE BASALT
PLEISTOCENE PYROCLASTIC ROCKS
TQvb PLIO-PLEISTOCENE BASALT
TQvp PLIO-PLEISTOCENE PYROCLASTIC ROCKS
TQwt WARM SPRINGS TUFF
Tpvb PLIOCENE BASALT
Tpva PLIOCENE ANDESITE
Tpvp PLIOCENE PYROCLASTIC ROCKS
Tmv MIOCENE VOLCANIC ROCKS UNDIVIDED
Tmvb MIOCENE BASALT
Tmva MIOCENE ANDESITE
Tmvp MIOCENE PYROCLASTIC ROCKS
Ttc TURNER CREEK FORMATION
Tmc CEDARVILLE SERIES
Tr RHYOLITE
Tvb BIG VALLEY MOUNTAIN VOLCANIC SERIES
Tsv SIERRAN VOLCANIC ROCKS, UNDIVIDED
Tsvb SIERRAN BASALT
Tsva SIERRAN ANDESITE
Tsvp SIERRAN PYROCLASTIC ROCKS
CENOZOIC
QUATERNARY
TERTIARY
Recent
Pleistocene
Pliocene
Miocene
Undivided
BASEMENT COMPLEX
MESOZOIC
PALEOZOIC
JKgr GRANITIC ROCKS
Pzm METAMORPHIC ROCKS
SYMBOLS
GEOLOGIC CONTACT
FAULT DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
CONCEALED FAULT
LOCATION OF GEOLOGIC SECTION
KEY TO PLATES
SCALE OF MILES

NOTE:
COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET.
FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING CHARACTER [illegible] STRATIGRAPHIC COLUMN (TABLE 18)

GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

STATE OF CALIFORNIA
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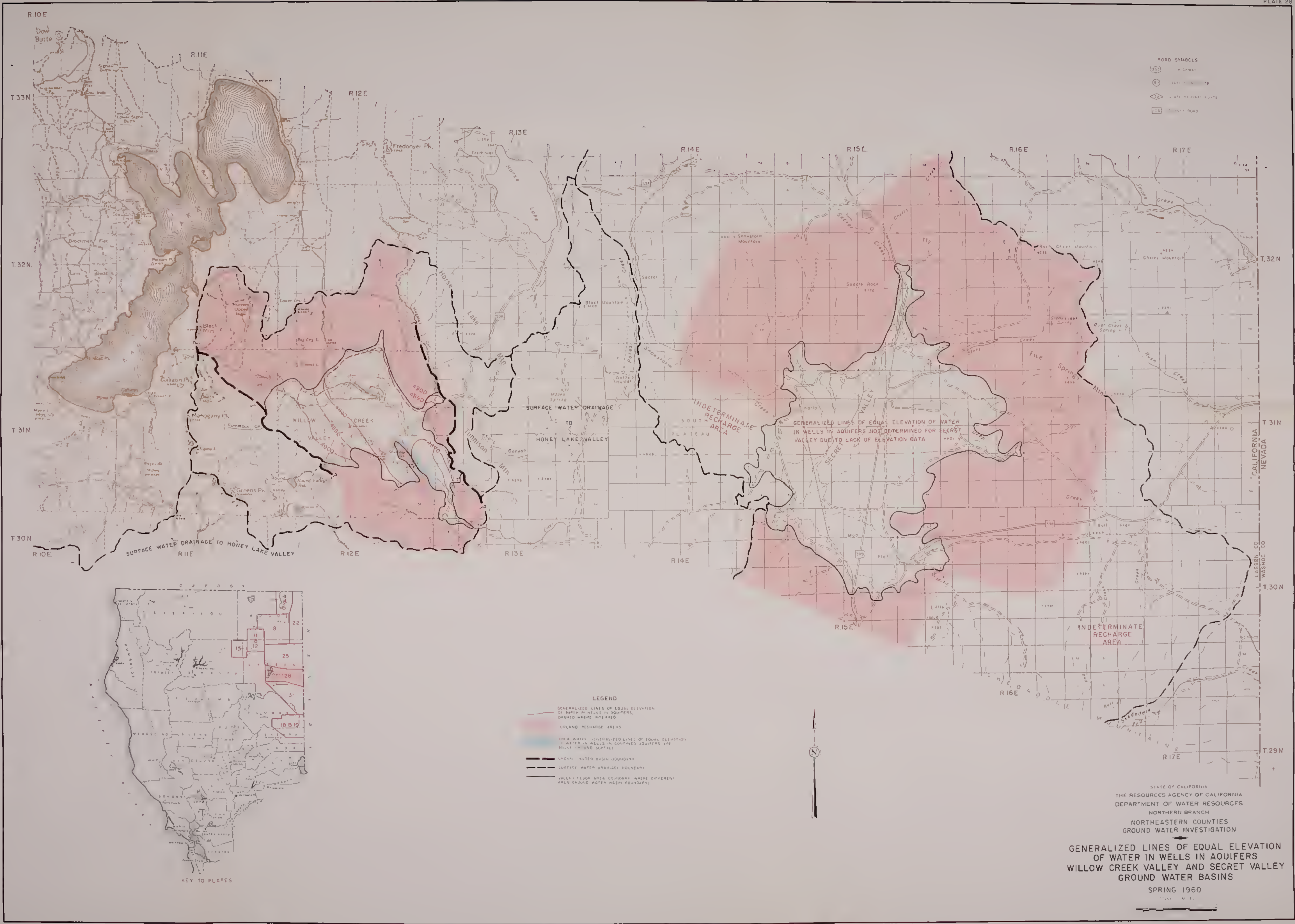
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

AREAL GEOLOGY
WILLOW CREEK VALLEY AND SECRET VALLEY GROUND WATER BASINS

1962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R.16E.
R.17E.
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T.32N.
T.31N.
T.30N.
T.29N.
Dow Butte
Fredonyer Pk.
Brockman Flat
Black Mtn.
Gallatin Pk.
Mahogany Pk.
Greens Pk.
Horse Lake Mtn.
Gunnison Mtn.
Black Mountain
Snowstorm Mountain
Saddle Rock
Shaffer Mountain
Five Springs Mtn.
Rush Creek
Secret Creek
Willow Creek Valley
Secret Valley
South Plateau
4900
4890
SURFACE WATER DRAINAGE TO HONEY LAKE VALLEY
SURFACE WATER DRAINAGE TO HONEY LAKE VALLEY
INDETERMINATE RECHARGE AREA
INDETERMINATE RECHARGE AREA
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS NOT DETERMINED FOR SECRET VALLEY DUE TO LACK OF ELEVATION DATA
CALIFORNIA
NEVADA
LASSEN CO.
WASHOE CO.
ROAD SYMBOLS
KEY TO PLATES
LEGEND
GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS, DASHED WHERE INFERRED
UPLAND RECHARGE AREAS
AREA WHERE GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN CONFINED AQUIFERS ARE ABOVE GROUND SURFACE
GROUND WATER BASIN BOUNDARY
SURFACE WATER DRAINAGE BOUNDARY
VALLEY FLOOR AREA BOUNDARY WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY
N

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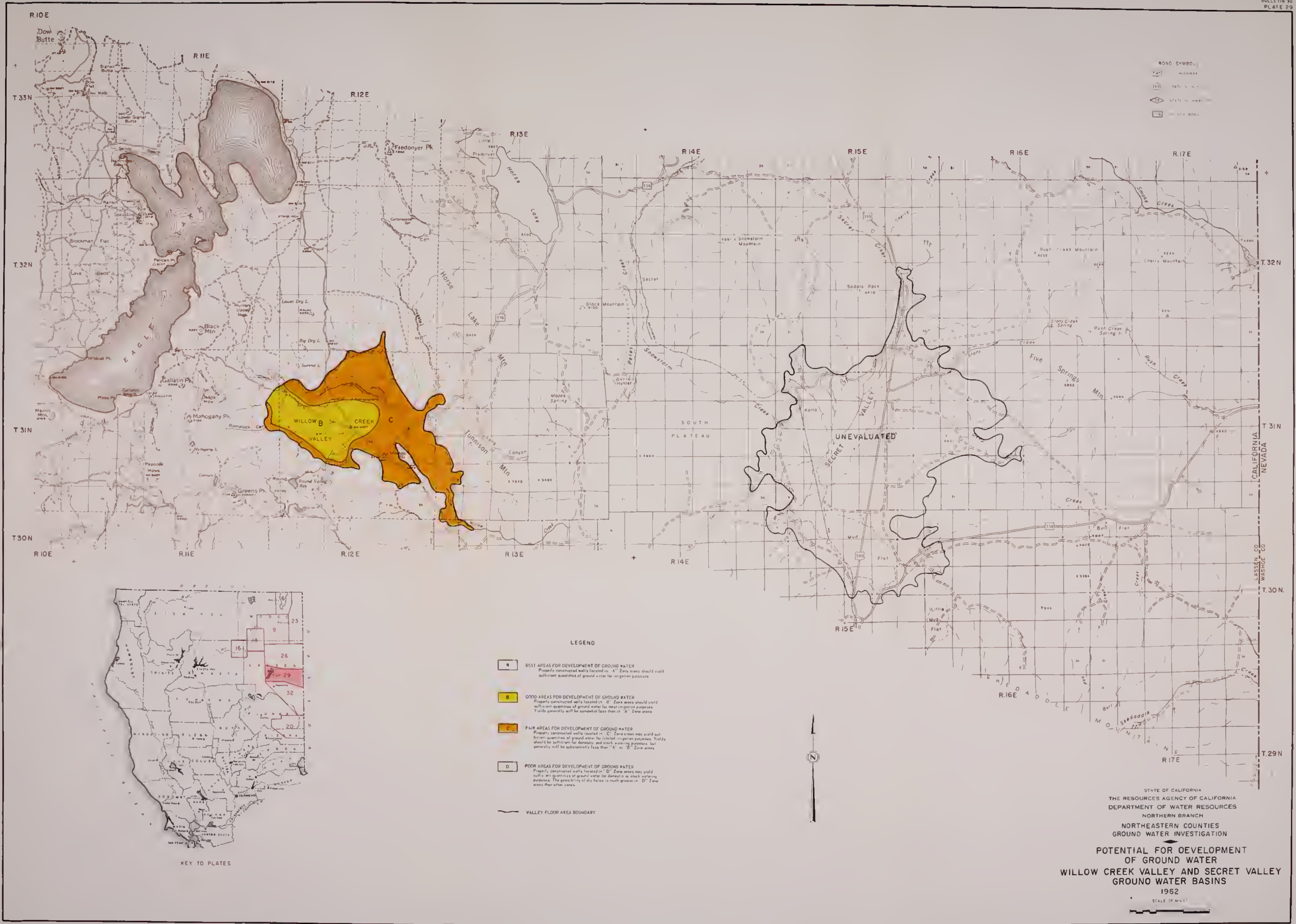
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AOUIFERS WILLOW CREEK VALLEY AND SECRET VALLEY GROUND WATER BASINS

SPRING 1960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R.13E
R.14E
R.15E
R.16E
R.17E
T.33N
T.32N
T.31N
T.30N
T.29N
Dow Butte
Signal Butte
Fredonyer Pk
Horse Lake
Eagle Lake
Black Mtn
Gallatin Pk
Mahogany Pk
Greens Pk
Round Valley Res
WILLOW B CREEK C
VALLEY
Horse Lake Mtn
Tunnison Mtn
Snowstorm
SOUTH PLATEAU
UNEVALUATED
SECRET VALLEY
Saddle Rock
Rush Creek Mountain
Five Springs Mtn
Smoke Creek
Mud Flat
Little Mud Flat
SKEDADDLE MOUNTAINS
CALIFORNIA
NEVADA
LASSEN CO
WASHOE CO
ROAD SYMBOL
KEY TO PLATES
23
9
15
16
26
29
32
20

LEGEND

A BEST AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.

🟨 B GOOD AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "B" Zone areas should yield sufficient quantities of ground water for most irrigation purposes. Yields generally will be somewhat less than in "A" Zone areas.

🟧 C FAIR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "C" Zone areas may yield sufficient quantities of ground water for limited irrigation purposes. Yields should be sufficient for domestic and stock watering purposes, but generally will be substantially less than "A" or "B" Zone areas.

D POOR AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "D" Zone areas may yield sufficient quantities of ground water for domestic or stock watering purposes. The possibility of dry holes is much greater in "D" Zone areas than other zones.

VALLEY FLOOR AREA BOUNDARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

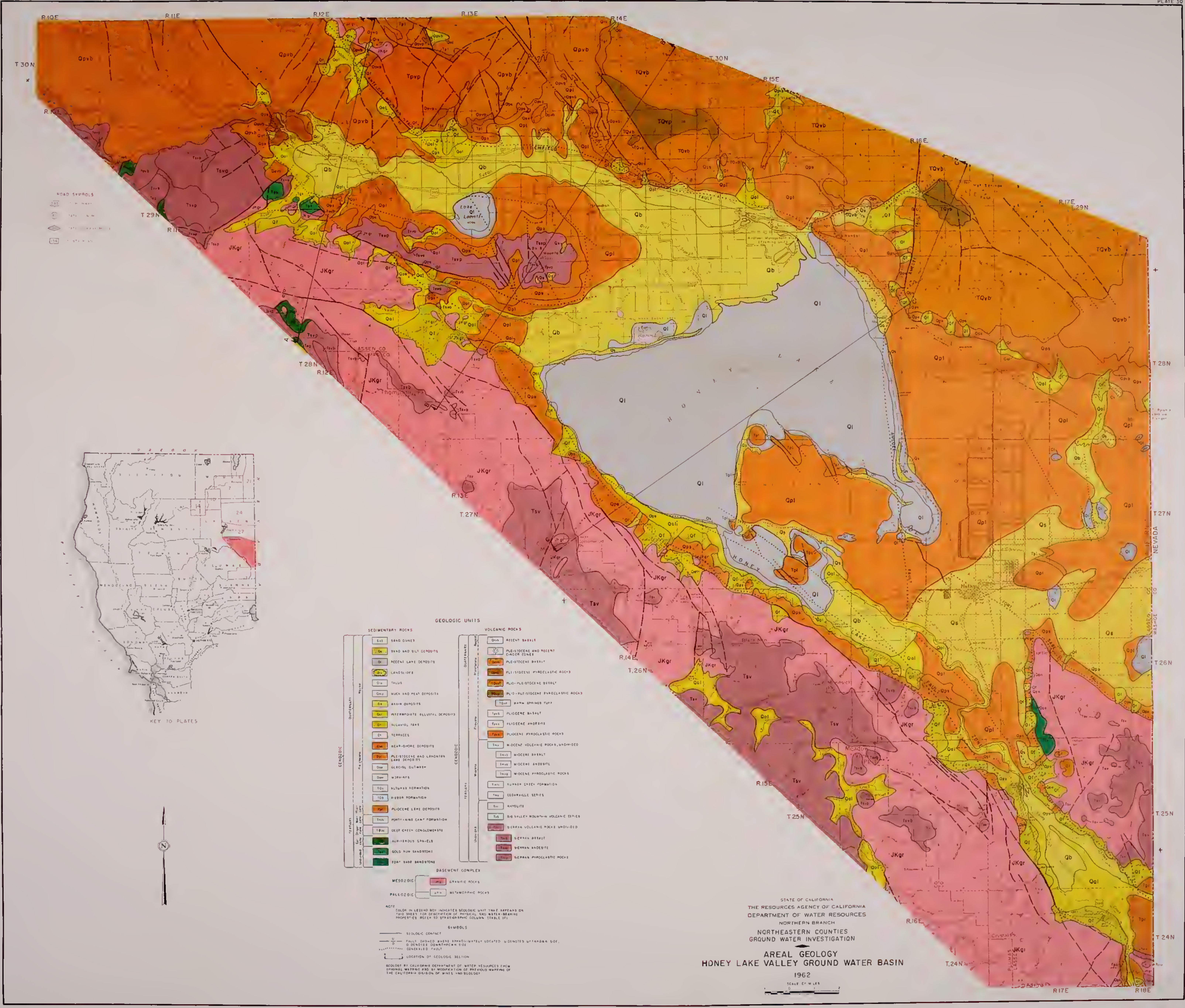
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

POTENTIAL FOR DEVELOPMENT OF GROUND WATER
WILLOW CREEK VALLEY AND SECRET VALLEY GROUND WATER BASINS

1962

SCALE OF MILES


R.10E
R.11E
R.12E
R.13E
R.14E
R.15E
R.16E
R.17E
R.18E
T.30N
T.29N
T.28N
T.27N
T.26N
T.25N
T.24N
NEVADA
WASHOE CO.
HONEY LAKE
Qpvb
Tpvp
TQvb
TQvp
Qb
Qpl
Ql
Qal
Qs
Tsv
JKgr
ROAD SYMBOLS
KEY TO PLATES
OREGON
GEOLOGIC UNITS
SEDIMENTARY ROCKS
SAND DUNES
SAND AND SILT DEPOSITS
RECENT LAKE DEPOSITS
LANDSLIDES
TALUS
MUCK AND PEAT DEPOSITS
BASIN DEPOSITS
INTERMEDIATE ALLUVIAL DEPOSITS
ALLUVIAL FANS
TERRACES
NEAR-SHORE DEPOSITS
PLEISTOCENE AND LAHONTAN LAKE DEPOSITS
GLACIAL OUTWASH
MORAINES
ALTURAS FORMATION
BIEBER FORMATION
PLIOCENE LAKE DEPOSITS
FORTY-NINE CAMP FORMATION
DEEP CREEK CONGLOMERATE
AURIFEROUS GRAVELS
GOLD RUN SANDSTONE
FORT SAGE SANDSTONE
VOLCANIC ROCKS
RECENT BASALT
PLEISTOCENE AND RECENT CINDER CONES
PLEISTOCENE BASALT
PLEISTOCENE PYROCLASTIC ROCKS
PLIO-PLEISTOCENE BASALT
PLIO-PLEISTOCENE PYROCLASTIC ROCKS
WARM SPRINGS TUFF
PLIOCENE BASALT
PLIOCENE ANDESITE
PLIOCENE PYROCLASTIC ROCKS
MIOCENE VOLCANIC ROCKS, UNDIVIDED
MIOCENE BASALT
MIOCENE ANDESITE
MIOCENE PYROCLASTIC ROCKS
TURNER CREEK FORMATION
CEDARVILLE SERIES
RHYOLITE
BIG VALLEY MOUNTAIN VOLCANIC SERIES
SIERRAN VOLCANIC ROCKS UNDIVIDED
SIERRAN BASALT
SIERRAN ANDESITE
SIERRAN PYROCLASTIC ROCKS
CENOZOIC
QUATERNARY
TERTIARY
Recent
Pleistocene
Pliocene
Miocene
Undivided
BASEMENT COMPLEX
MESOZOIC
PALEOZOIC
GRANITIC ROCKS
METAMORPHIC ROCKS
SYMBOLS
GEOLOGIC CONTACT
FAULT, DASHED WHERE APPROXIMATELY LOCATED. U DENOTES UPTHROWN SIDE, D DENOTES DOWNTHROWN SIDE
CONCEALED FAULT
LOCATION OF GEOLOGIC SECTION
SCALE OF MILES

NOTE
COLOR IN LEGEND BOX INDICATES GEOLOGIC UNIT THAT APPEARS ON THIS SHEET. FOR DESCRIPTION OF PHYSICAL AND WATER-BEARING PROPERTIES REFER TO STRATIGRAPHIC COLUMN, TABLE 1(F)

GEOLOGY BY CALIFORNIA DEPARTMENT OF WATER RESOURCES FROM ORIGINAL MAPPING AND BY MODIFICATION OF PREVIOUS MAPPING OF THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

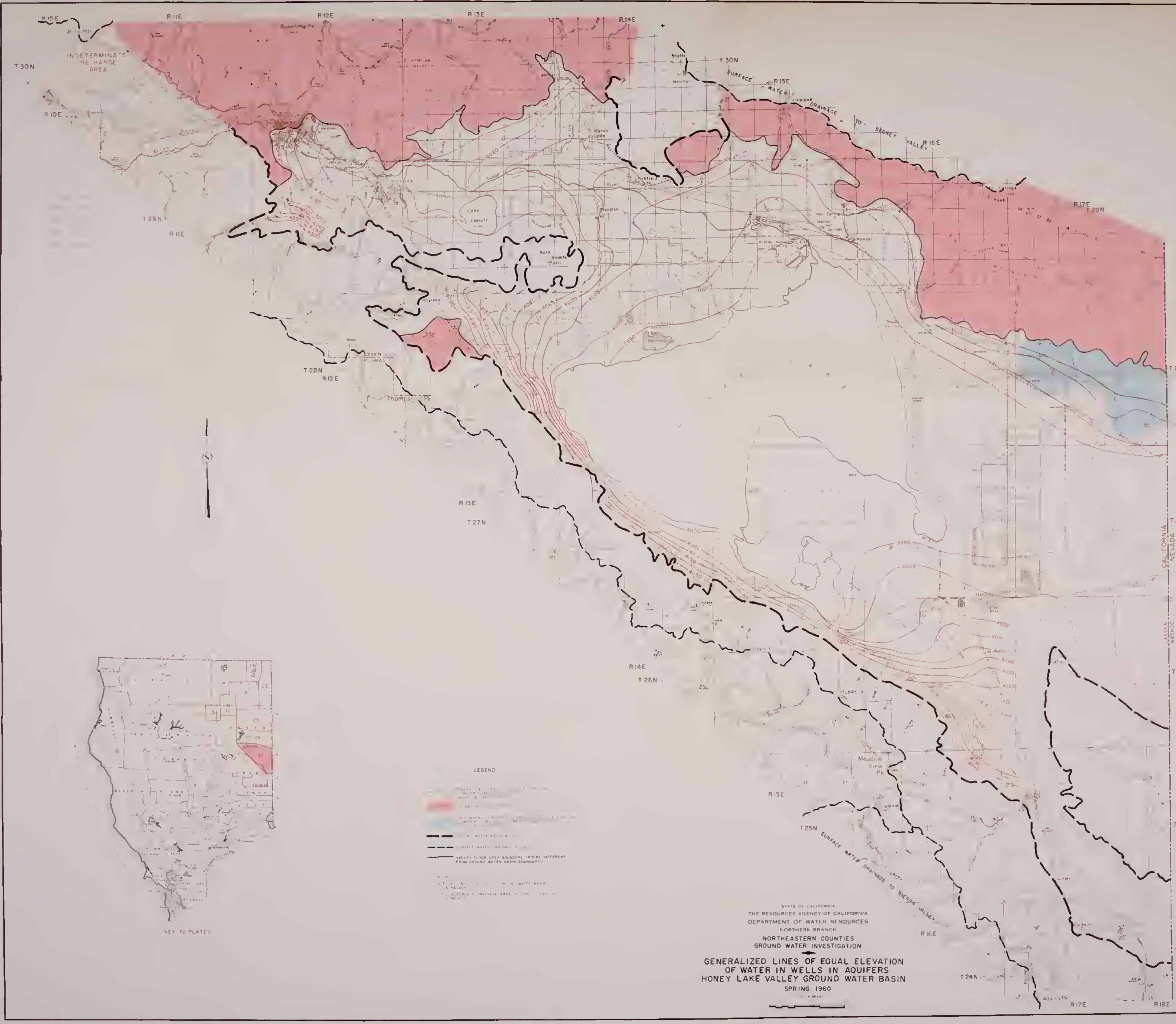
STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

◆

AREAL GEOLOGY
HONEY LAKE VALLEY GROUND WATER BASIN

1962

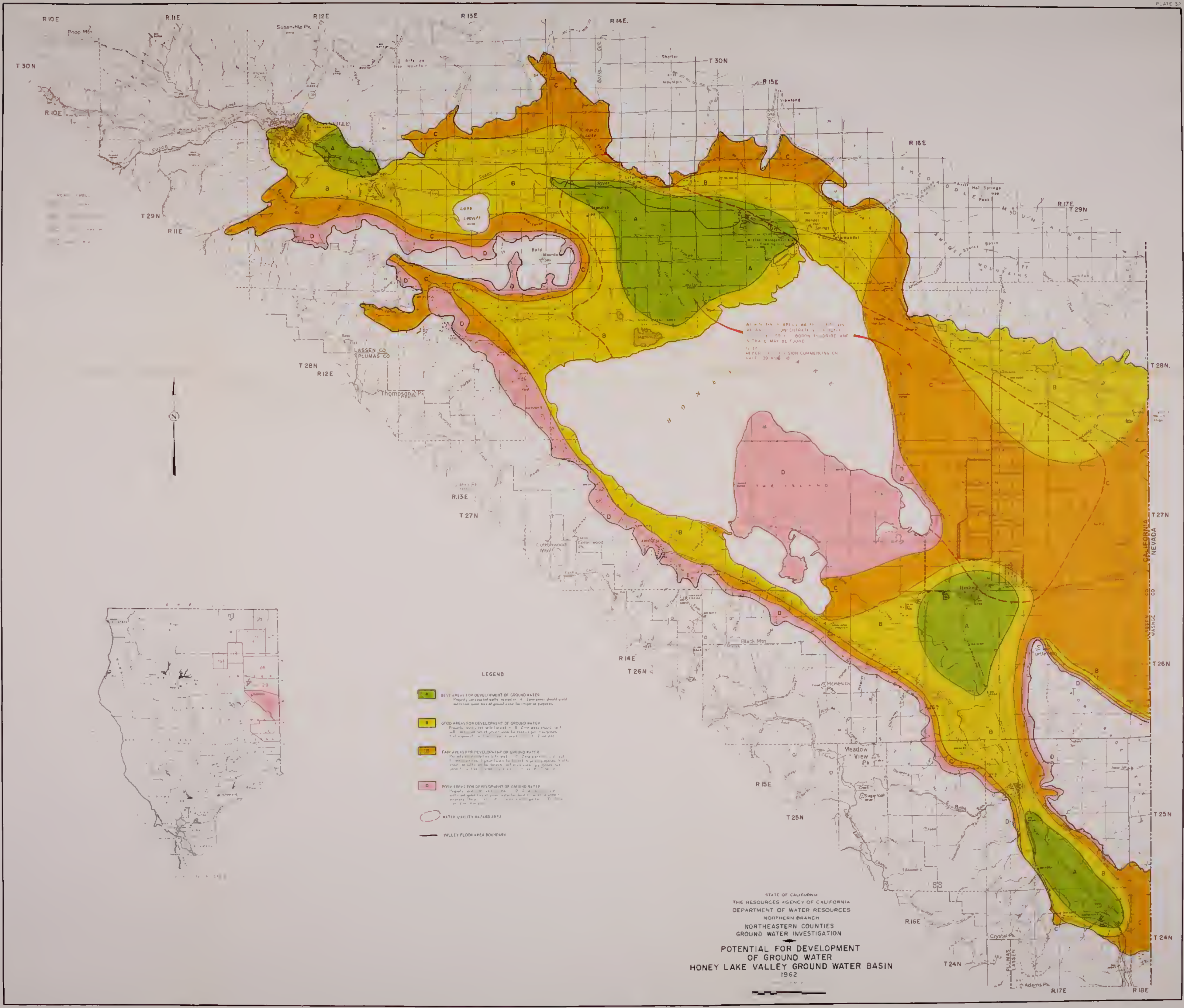

R10E
R11E
R12E
R13E
R14E
R15E
R16E
R17E
R18E
T 30N
T 29N
T 28N
T 27N
T 26N
T 25N
T 24N
INDETERMINATE
RE HARGE
AREA
Susanville Pk
Susan
River
Lake
Leavitt
Wards
Lake
Litchfield
Standish
Hot Springs
Wendel
Thompson Pk
Meadow
View
Pk
LASSEN CO
PLUMAS
CALIFORNIA
NEVADA
LASSEN
WASHOE
SURFACE WATER DRAINAGE TO SECRET VALLEY
SURFACE WATER DRAINAGE TO SIERRA VALLEY
MOUNTAINS
4000
4020
4040
4060
4080
4100
4120
4150
4200
4240
4260
4300
3990
KEY TO PLATES
22
25
28
31
LEGEND
VALLEY FLOOR AREA BOUNDARY (WHERE DIFFERENT FROM GROUND WATER BASIN BOUNDARY)

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH

NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

GENERALIZED LINES OF EQUAL ELEVATION OF WATER IN WELLS IN AQUIFERS HONEY LAKE VALLEY GROUND WATER BASIN

SPRING 1960


R10E
R11E
R12E
R13E
R14E
R15E
R16E
R17E
R18E
T30N
T29N
T28N
T27N
T26N
T25N
T24N
Susanville Pk.
Susanville
Susan River
Lake Leavitt
Bald Mountain
Wendel
Litchfield
Standish
Hot Springs
Skedaddle Mountains
Honey Lake
The Island
Herlong
Thompson Pk.
Cottonwood Mtn.
Black Mtn.
McKesick Pk.
Meadow View Pk.
Sugarloaf
Crystal Pk.
Adams Pk.
LASSEN CO
PLUMAS CO
CALIFORNIA
NEVADA
LASSEN CO
WASHOE CO
A
B
C
D
N

LEGEND

🟩 A BEST AREAS FOR DEVELOPMENT OF GROUND WATER
Properly constructed wells located in "A" Zone areas should yield sufficient quantities of ground water for irrigation purposes.

🟨 B GOOD AREAS FOR DEVELOPMENT OF GROUND WATER

🟧 C FAIR AREAS FOR DEVELOPMENT OF GROUND WATER

🟥 D POOR AREAS FOR DEVELOPMENT OF GROUND WATER

○ WATER QUALITY HAZARD AREA

— VALLEY FLOOR AREA BOUNDARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
NORTHERN BRANCH
NORTHEASTERN COUNTIES
GROUND WATER INVESTIGATION

POTENTIAL FOR DEVELOPMENT OF GROUND WATER HONEY LAKE VALLEY GROUND WATER BASIN

1962